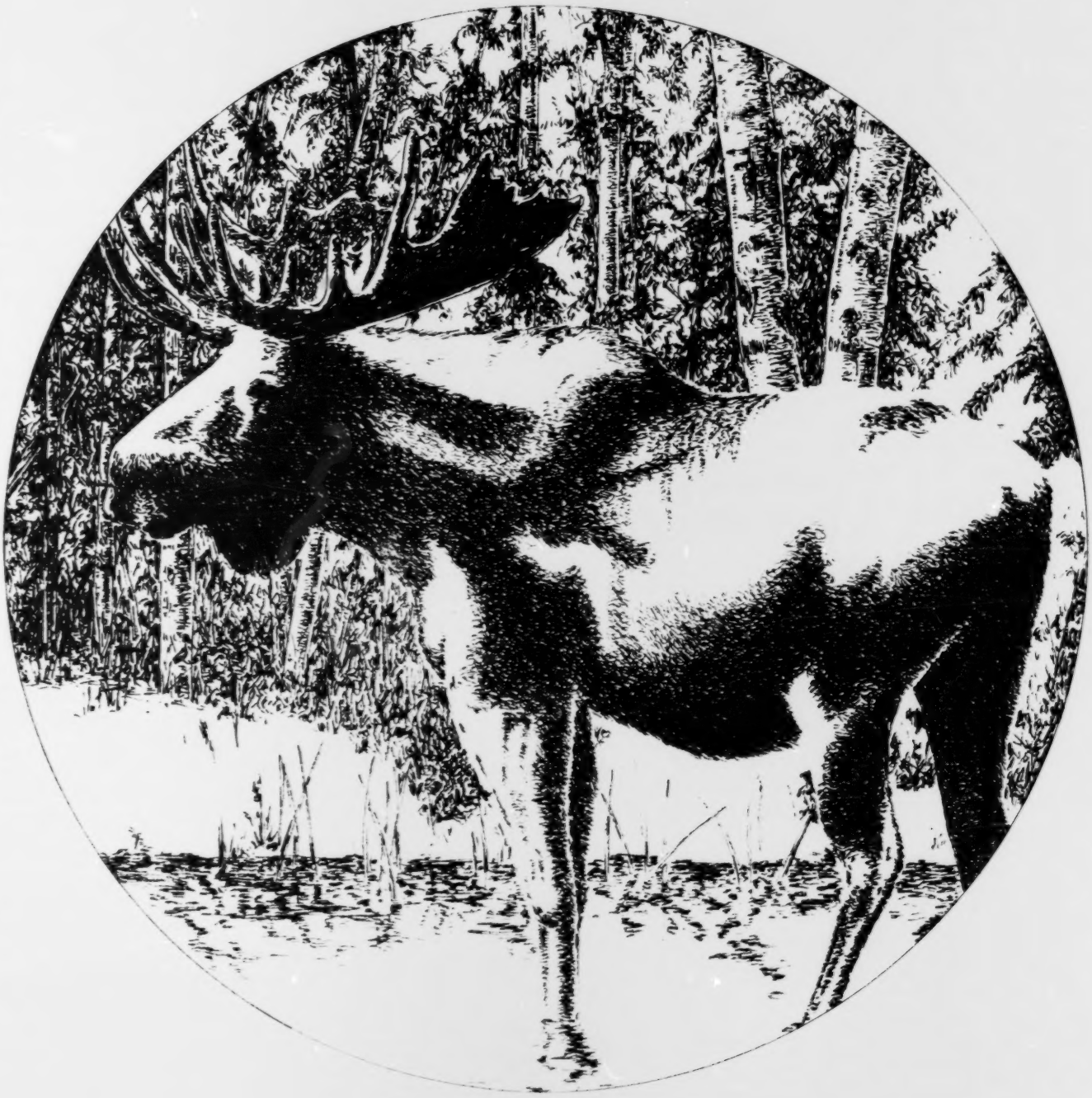
Saskatchewan
Tourism and
Renewable
Resources

Saskatchewan Game Management Harvest 1981-82



SASKATCHEWAN GAME

HARVEST MANAGEMENT

1981-82

WILDLIFE BRANCH

Saskatchewan Tourism and

Renewable Resources

ABSTRACT

Game Bird hunting regulations were "normal" in 1981 - little changed from the previous year. Game bird hunting activity declined 15 percent - 30 percent, depending on the parameter viewed. Only 49,000 Saskatchewan residents bought game bird hunting licences compared to 59,000 in 1980. Drought and concern about Endrin contamination suppressed duck hunting. This secondarily reduced the hunting of almost all game birds. Low grouse populations may also have contributed to the decline.

The Saskatchewan duck harvest dropped from 400,000 (320,000 mallards) in 1980 to a near record low of 240,000 (196,000 mallards) in 1981. The goose harvest was relatively stable at 159,000. Low populations contributed to sharply reduced takes of sharp-tailed grouse and especially ruffed grouse. The Hungarian partridge harvest remained in the mid 60,000's whereas the pheasant harvest increased slightly to 12,500.

Duck breeding populations in agricultural Saskatchewan increased in spring 1982 in response to much improved water conditions. All goose populations are at relatively high levels. In contrast, sharp-tailed grouse populations are very low because of two years of very poor reproduction. Ruffed grouse are also in a (cyclic) population trough. Pheasant and Hungarian partridge in south central Saskatchewan were hurt by the severe winter there. Reproduction of all game birds may have been adversely affected by the cold, wet growing season in 1982.

Migratory bird hunting regulations are essentially unchanged for fall 1982. The upland game bird regulations are similar to those in force in 1981 but the sharp-tailed grouse season has been delayed two weeks in most areas to protect low populations. Upland game bird hunting seasons have been shortened by 3½ weeks in the southwestern area hard-hit by the late May snowstorm.

The major big game hunting regulation changes implemented in 1981 were the delay of the bull elk hunting season opening to September 20 and the introduction of all terrain vehicle morning use restriction in game management zones 23 to 25. Licence quota adjustments for mule deer, antelope and moose were also made.

Overall big game hunting activity increased 8 percent from the previous year. Moose and bear hunting activity declined 8 percent and 3 percent respectively. Saskatchewan and non-resident hunters purchased 102,458 big game hunting licences compared to 96,256 in 1980. The change was primarily attributed to increased mule deer and bull elk hunting licence quotas.

The northern moose harvest decreased from 5,152 in 1980 to a 15 year low of 2,247 in 1981. Poor hunting success due principally to unfavourable weather conditions contributed to moose harvest decline. The white-tailed deer harvest remained in the low 40,000's despite an attempt to harvest a higher proportion of the forest deer population.

Poor hunting success for bull elk resulted in a 21.7 percent harvest decline in 1981. Harvests for mule deer and antelope increased to 3,662 and 1,856 in 1981. The bear harvest dropped to a normal level of 900 from a high harvest recorded the previous year. Reduced bear licence sales and fewer occurrences of bear along the forest fringe areas contributed to the harvest decrease.

White-tailed deer populations in southern Saskatchewan are generally below previous recorded levels in response to severe winter conditions in southeastern and south central Saskatchewan. Forest deer populations continue to remain at high levels.

Moose populations in the southern forest areas are slightly below long-term average levels, whereas in the northern coniferous forest areas moose numbers are extremely low. Moose productivity appears normal except for the Cumberland Delta area where low calf production is evident. In regard to the provincial parks and wildlife management units, moose numbers are low in Moose Mountain Park and Cypress Hills area.

Elk populations in forest areas are generally increasing and expanding their range. Elk numbers are relatively stable in Fort-a-la-Corne and Moose Mountain Park but have dramatically decreased in Cypress Hills region. This is attributed to heavy sport hunting pressure over the past four years.

Mule deer populations are at relatively high levels and are expanding their distribution throughout the province. Hunting restrictions on mule deer over the past eight years has contributed to their increase.

Antelope populations are approaching record high levels. Antelope were hard hit by the severe 1981-1982 winter, along the eastern boundary of their range, and spring fawn mortality caused by the May snowstorm. However, high survival of last year's fawn crop and suspected movement of animals into Saskatchewan from Montana and Alberta offset any losses and contributed to population increase.

Population status of bear and woodland caribou are unknown but field observations suggest relatively stable numbers.

Several 1982 big game hunting regulations have been implemented. White-tailed deer seasons have been reduced in south-central and southeast Saskatchewan in response to the severe winter. Shorter seasons have also been established in many Parkland and Farmland zones to reduce hunting pressure. A special two week long primitive weapons deer season is slated for the last two weeks of the archery season. The special elk season in Cypress Hills is closed along with the closure of Moose Mountain Park moose season. Special moose quotas have been reduced in some areas as a result of the severe winter conditions experienced along the Saskatchewan-Alberta border. An archery moose season has been established for Game Management Zone 32.

HUNTING LICENCE SALES AND GAME HARVEST ESTIMATES, 1980 AND 1981

		Licence Sales		Harvest	
		1980	1981	1980	1981
I.	Game Birds	66,873	56,648		
	Ducks			398,000	240,000
	Geese			185,000	159,000
	Sandhill Crane			4,200	2,200
	Sharp-tailed Grouse			108,000	83,000
	Hungarian Partridge			66,000	64,000
	Ruffed Grouse			92,000	37,000
	Spruce Grouse			11,600	5,900
	Pheasant	6,019	6,418	11,800	12,500
				877,000	606,600
II.	Big Game				
	White-tailed Deer	65,393	71,810	42,754	41,149
	Moose	14,225	13,858	5,172	2,247
	Elk	3,241	3,672	616	575
	Mule Deer	4,094	4,328	3,571	3,662
	Antelope	2,194	2,395	1,650	1,856
	Bear	5,440	4,323	1,377	928
	Woodland Caribou	233	194	60	54
III.	Big Game Archery				
	White-tailed Deer	1,004	1,376	92	116
	Mule Deer	251	352	104	126
	Antelope	151	150	20	28

GROSS REVENUE FROM LICENCE SALES, 1980 AND 1981

	1980	1981	Percent Change
Game Bird	$ 583,630	549,800	-6.0
Big Game	$1,643,785	$1,764,750	+7.4
TOTAL	$2,227,415	$2,314,550	+4.0

ACKNOWLEDGEMENTS

Many members of the Wildlife Branch were involved in the production of this report through the collection of data and/or consultations. Regional and supervisory staff made particularly large contributions.

The Wildlife Branch is indebted to the hunters of Saskatchewan for providing, via the Hunter Surveys, the hunting information which forms the backbone of this report. Staff from the Program Planning and Administration Branches of Department of Tourism and Renewable Resources assisted in conducting the Hunter Surveys and providing the resultant data. D.T.R.R. Engineering Services staff capably prepared most of the illustrations presented herein. The significant contribution of D.T.R.R. Operations staff to game management in Saskatchewan is also recognized. They collect most of the biological samples used to determine the age and sex composition of the kill, and are instrumental in doing the spring game bird population surveys and big game aerial surveys. The Resource Officers in the districts also frequently serve as our eyes and ears, reporting qualitative information pertinent to wildlife.

PREFACE

This report succeeds the "Report of Hunter and Game Population Surveys" published annually by this Department from 1976 to 1980, and commonly referred to simply as the "Hunter Survey Report", after the annual reports published prior to 1976. It is intended to provide more comprehensive information on annual game management. To this end, there is much more discussion and analysis of the data than in the past, and events are traced from one set of yearly hunting regulations to the next.

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GAME BIRDS

1981 HUNTING REGULATIONS

Appendix 1 presents the game management zone structure. The season dates and bag limits pertaining to game bird hunting are outlined in Appendix 2. These regulations were essentially unchanged from 1980. However, all special restrictions were lifted from non-resident Canadians except the delayed goose season opening and the pheasant hunting prohibition. Non-resident aliens were permitted to hunt ducks commencing at the start of the general season and were allowed to hunt sharp-tailed grouse in Zone 5.

DATA COLLECTION TECHNIQUES

Licence Sales

Licence sales are tabulated by the Revenue division of Department of Tourism and Renewable Resources Administration, using returns from vendors.

Hunter Survey

The Saskatchewan Game Bird Hunter Survey questionnaire was redesigned in 1981 through a co-operative effort by the Program Planning (Research and Evaluation Unit) and Wildlife Branches. A major goal was to increase the response rate, which had dipped below 20 percent in recent years. The resultant form (Appendix 3) embodies several major changes:

(1) A condensed, simpler reporting format.
(2) A more personal appeal to the hunter.
(3) Improved explanation of rationale for the survey. In addition, a game management zone reference map and feedback on the results of the 1980 survey were provided.

The Game Bird Hunter Survey was conducted by the Research and Evaluation Unit of the Program Planning Branch.

One-third (23,000) of the 1980 resident game bird hunters were randomly selected to receive the 1981 Hunter Survey, using 1980 licence stubs. These hunters were mailed a survey form (Appendix 3) during the last half of September. Seven percent of the surveys were returned by the last week of November. At that time, a follow-up letter (Appendix 4) and another copy of the questionnaire were mailed to almost all (20,000) non-respondents. The total response by the February 1, 1982 cut-off date for receipt of returns was 48 percent. This was more than double the return rate of recent past years, suggesting the questionnaire redesign increased the effectiveness of the survey.

Approximately 25 percent of non-resident hunters were sampled, using 1981 licence sales. Two thousand questionnaires (Appendix 3) were mailed in December. No second mailing was conducted. The response to the single mailing was 26 percent.

The returned questionnaires were edited and keypunched. Computer analysis of the data was conducted by a Saskatoon consultant, Don Fowler; print-outs were available on approximately April 1.

Wing Collection

Wings were collected from hunter-bagged upland game birds to derive population age structures, from which reproductive success could be inferred. The conservation officer staff were instrumental in making these collections, using envelopes provided. Renewable resources technology students were utilized to age the wing samples according to primary feather irruption and wear. Experienced Wildlife Branch personnel served as checkers.

Population Surveys

Upland game bird populations were surveyed between April 15 and May 15, using established survey methods (Appendix 5). Visual and auditory techniques were involved. Wildlife Branch staff and conservation officers participated in the surveys. The data were compiled and analyzed by the Wildlife Branch.

1981 LICENCE SALES

Saskatchewan game bird hunting licence sales dropped 16 percent in 1981, compared to 1980 (Table 1). The change occurred among Saskatchewan residents, who purchased only 49,000 licences after buying approximately 60,000 for several years. Sales to non-resident Canadians and non-resident aliens were stable at approximately 3,800 licences sold to each group.

1981 WATERFOWL HUNTING ACTIVITY

The drop in game bird licence sales is attributed to poor waterfowl hunting, and specifically, poor duck hunting (Figure 1). It was probably aggravated by publicity concerning possible Endrin poisoning of waterfowl. Sampling didn't detect any Endrin in Saskatchewan waterfowl, but the issue received extensive media coverage and many hunters reportedly opted not to hunt at all.

Ten thousand (10,000) fewer Saskatchewan residents actively hunted waterfowl in this province in 1981, than in 1980 (Table 1). This accounted for almost all of the 21 percent decline in total active waterfowl hunters. 38,000 people hunted waterfowl last year, a decline of 26 percent from the recent average (Table 2). They hunted the same amount of days (average 2.6 days) per capita as did active 1980 waterfowl hunters, but this was 10 percent below the average of previous years.

Poor duck hunting was at the root of the 1981 game bird hunting trend changes. Two years of drought and resultant low duck populations were translated into reduced hunter activity. The number of active duck hunters dropped from 40,000 in 1980 to 30,000 (Appendix 6). This, combined with a slight reduction in the average amount of time each hunter spent in the field, produced a -30 percent change in duck hunter-days expended (Figure 1). Both parameters are well below the average of the last decade. In fact, only during the drought of the early 1960's were fewer active hunters recorded.

Goose hunting was relatively stable last fall, reflecting constant, high, goose populations (hunting opportunity). Active goose hunter numbers

TABLE 1 : General Measures of Sask. Game Bird Hunting, 1981 vs 1980

Hunter Category	Sask. Game Bird Licence Sales			Active Waterfowl Hunters			Active Upland Game Bird Hunters		
	1980	1981*	% Change	1980	1981	% Change	1980	1981	% Change
Sask. Resident	59,151	49,034	- 18	41,463	31,176	- 25	33,822	28,763	- 15
Non-Resident (Canadian)	3,929	3,813	- 4	3,575	3,471	- 3	1,171	1,736	+ 48
Non-Resident (Alien)	3,793	3,801	- 2	3,587	3,614	+ 1	1,793	1,647	- 8
TOTAL	66,873	56,648	- 16	48,625	38,261	- 21	36,786	32,147	- 13

* "Final", mid-summer tally; slightly higher than spring tally reported previously.

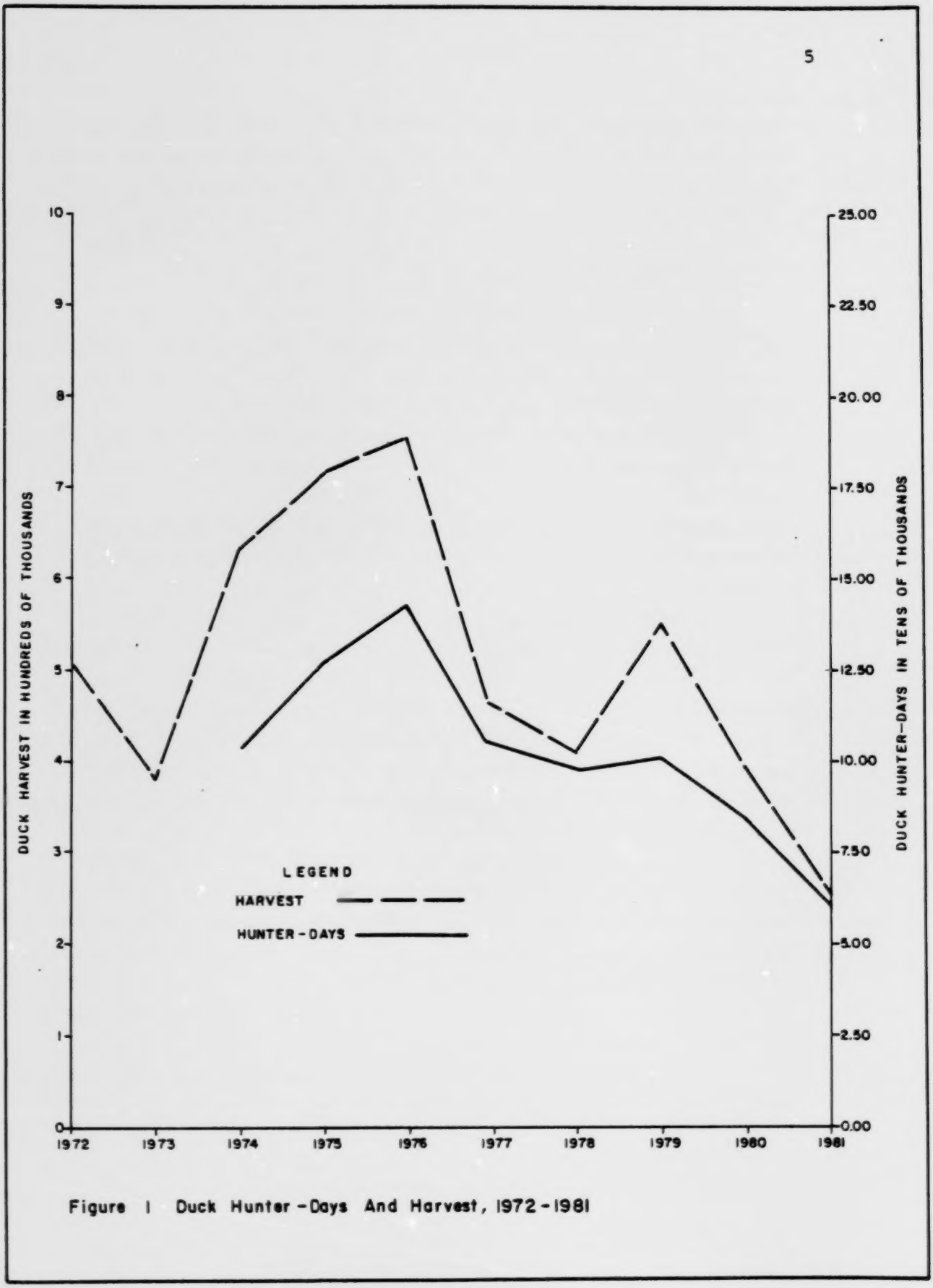


Figure 1 Duck Hunter-Days And Harvest, 1972-1981

and goose hunter-days declined 12 percent - 16 percent from 1980 levels and recent averages (Figure 2, Appendix 7). Consequently, goose hunting was in the unusual position of being almost as significant as duck hunting. The 1970's ratio of duck to goose hunting activity has been about 60:40.

1981 UPLAND GAME BIRD HUNTING ACTIVITY

Upland game bird hunting recreation was also at a relatively low level in 1981. This was probably a spin-off effect of the changes in waterfowl hunting. Saskatchewan game bird hunters are believed to hunt waterfowl primarily and to hunt upland birds secondarily.

Five thousand (5,000) fewer Saskatchewan residents actively hunted upland game birds in 1981 than in 1980, producing the 13 percent decline noted in total active upland hunters (Tables 1 & 3, Fig. 3). There was a 50 percent increase in active hunters in the non-resident Canadian category in response to removal of all special restrictions on them.

Total upland hunter-days expended in Saskatchewan dropped 9 percent from 1980. This was due largely to fewer active hunters, not to less time spent per hunter (Table 3, Figure 4). Similar changes characterized each game management division except the Grassland (Table 4). A 23 percent increase in upland hunter-days was recorded there, apparently due to removal of some non-resident restrictions from Zones 5 and 6. The Farmland remained the pre-eminent upland game bird hunting areas, providing 43 percent of this recreation.

The apparent upland game bird hunting pressure averaged .48 hunter days/sq. mile in the southern four game management divisions (excluding Zone 34) (Table 4). The Farmland, as is traditional, received the highest pressure at .63 hunter days/sq. mile. Real hunting pressures on upland game bird habitats and populations are much higher. Terrestrial Habitat Inventory data that has just become available has enabled a much more refined determination of these.

The 1981 upland game bird hunting pressure averaged 1.8 hunter-days/sq. mile of native habitat in the Grassland and Farmland combined.

Table 2: Waterfowl Hunting Activity in Saskatchewan, 1972-81

YEAR	ACTIVE WATERFOWL HUNTERS	WATERFOWL HUNTER DAYS	HUNTER DAYS/ ACTIVE HUNTER
1972	-	-	-
1973	43,200	116,700	2.7
1974	47,700	150,000	3.1
1975	56,100	175,500	3.1
1976	58,600	188,600	3.2
1977	57,100	163,300	2.9
1978	52,300	135,400	2.6
1979	51,300	138,300	2.7
1980	48,600	128,200	2.6
1981	38,300	98,100	2.6
73-80 Av.	51,900	149,500	2.9
% Change 81 vs 80	-21	-23	0
% Change 81 vs Av.	-26	-34	-10

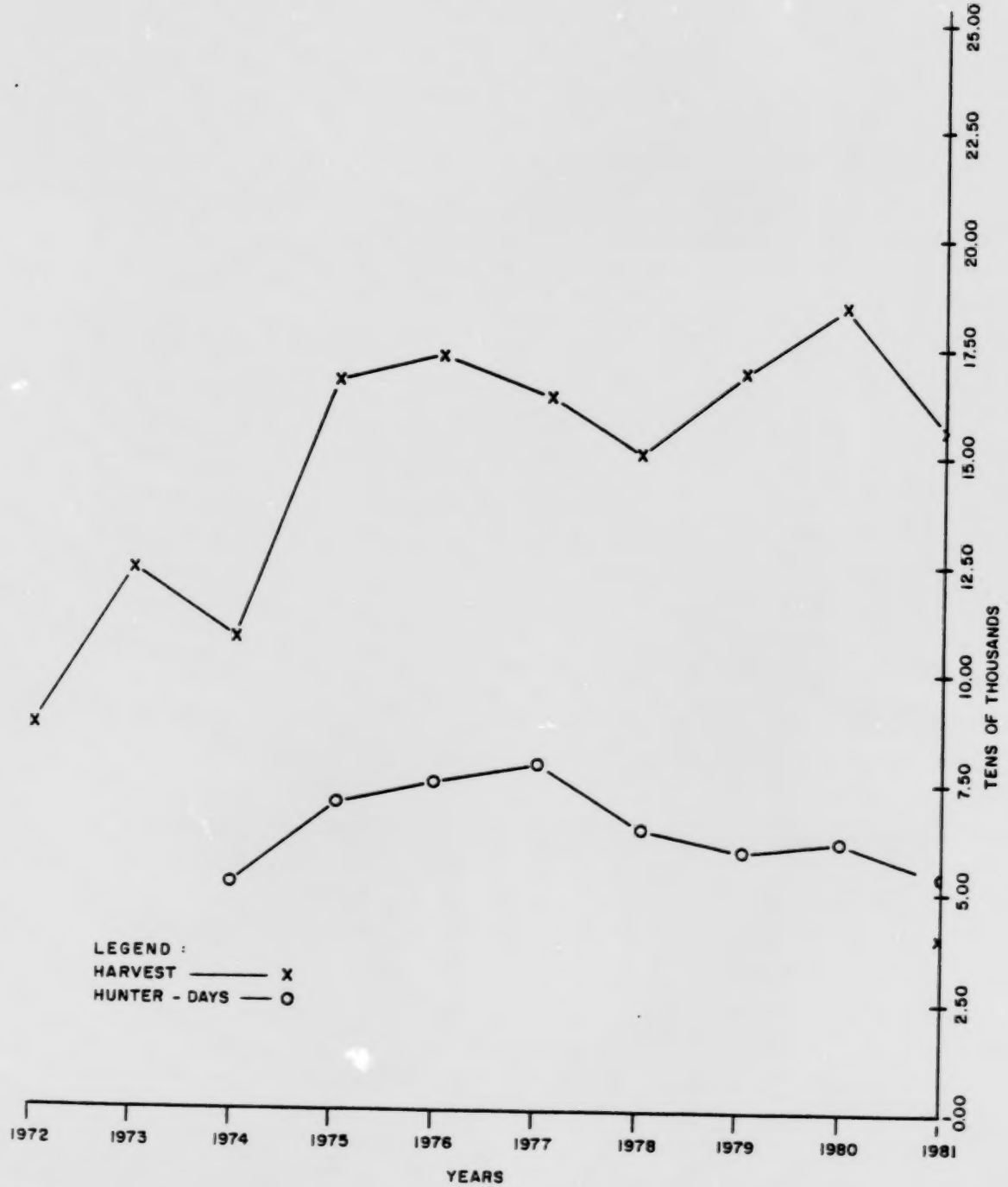


Figure 2 Goose Hunter-Days And Harvest 1972-81

However, the Grassland was subject to only .8 hunter-days/sq. mile of native habitat, in contrast to 2.8 hunter-days/sq. mile in the Farmland.

Zones 11 and 13 are receiving the heaviest upland game bird hunting pressure on the basis of both gross and native habitat area. Zone 11 supported 5.2 upland hunter-days/sq. mile of native habitat in 1981. This was down from 6.0 hunter-days/sq. mile of native habitat in 1980, which culminated a major, later 1970's increase in hunting pressure in this zone. Zone 13 is apparently now receiving a dramatic upsurge in upland game bird hunting. It was one of the few zones where a significant increase occurred in 1981; a hunting pressure of 4.7 upland hunter-days/sq. mile of native habitat was observed.

The concentration of upland game bird hunting in the Farmland reflects the relatively high game and human populations in this region. The current focusing of this pressure near the major cities may be related to increased gas prices and generally lower incomes. It is a trend that deserves scrutiny.

1981 GAME BIRD HARVEST

Table 5 provides a very general summary of the game bird harvest for the 1981 hunting season. The take of all species except pheasant, declined relative to 1980. Slightly over 600,000 game birds were bagged, based on the Hunter Survey.

Waterfowl and upland game bird hunting are summarized in Tables 6 and 7, respectively. Note that 81 percent of the duck harvest was made up of mallards, while Canada geese dominated the goose kill (Table 6). Non-residents took 26 percent of the waterfowl harvest in contrast to 12 percent of the upland game bird harvest (Table 7). Sharp-tailed grouse were the most important upland game bird in 1981.

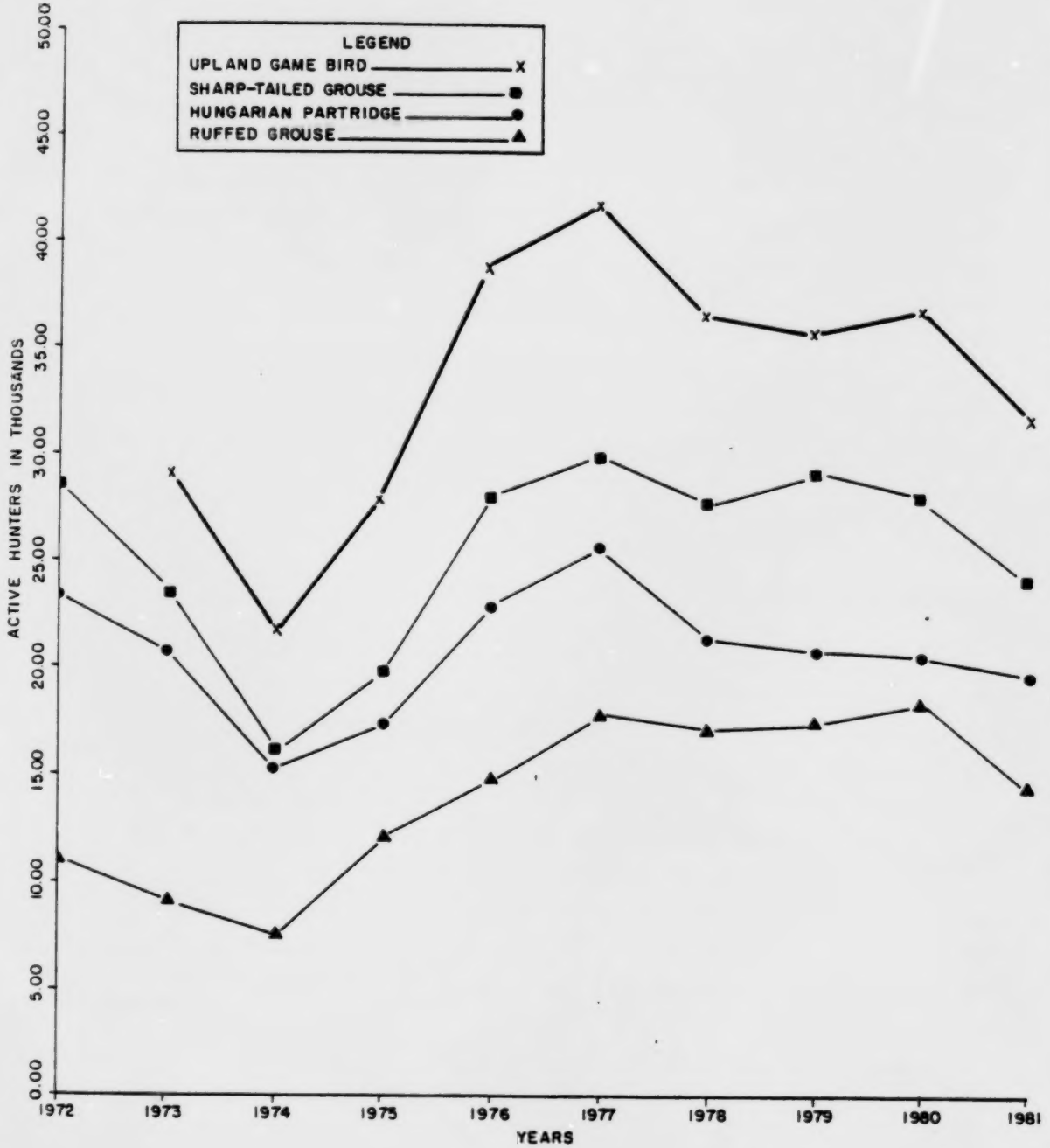


Figure 3 – Upland Game Bird Hunters, Active In Saskatchewan, 1972–1981 (Except Pheasant)

Table 3: UPLAND GAME BIRD HUNTING ACTIVITY IN SASKATCHEWAN DURING THE 1970-81

YEAR	ACTIVE UPLAND BIRD HUNTERS	UPLAND BIRD HUNTER DAYS	HUNTER DAYS/ ACTIVE HUNTER
1970		73,986	
1971		87,906	
1972		56,534	
1973	28,500	53,275	1.9
1974 1/	21,857	37,801	1.7
1975 1/	27,812	48,161	1.7
1976 1/	39,035	86,525	2.2
1977 1/	41,772	93,496	2.2
1978	36,766	72,378	2.0
1979	36,373	72,096	2.0
1980	36,786	75,578	2.1
1981	32,147	68,988	2.1
73-80 Av.	33,033	66,591	2.0
% Change 81 vs 80	- 13	- 9	0
% Change 81 vs Av.	- 3	+ 4	- 5

1/ Erroneous data was published for these years prior to 1979 corrections.

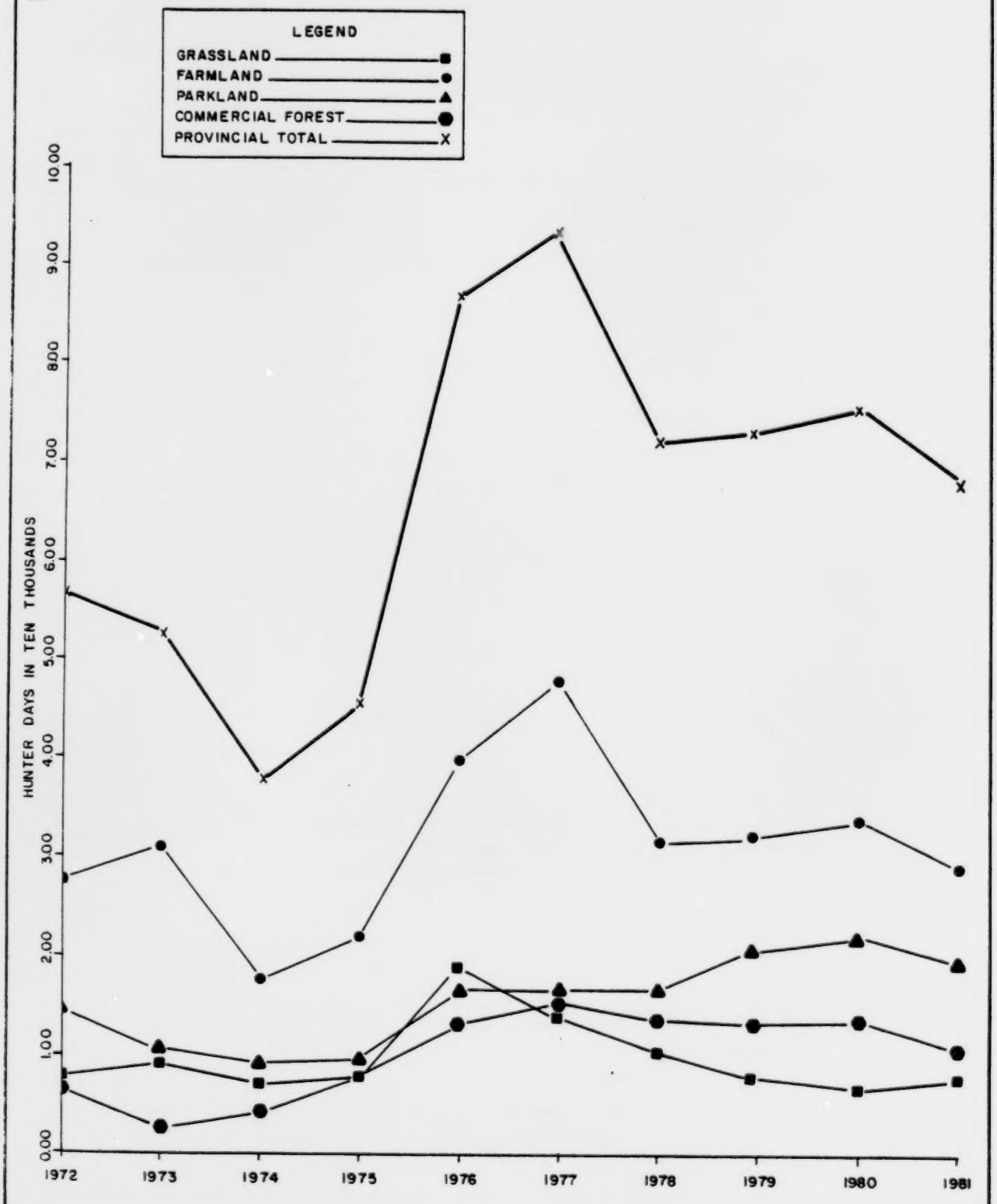


Figure 4 – Upland Game Bird Hunter-Days Expended In Saskatchewan 1972–1981 (Except Pheasant)

Table 4: Comparison of Saskatchewan Upland Game Bird Hunting Activity by Game Management Division 1979-81

UPLAND GAME BIRD HUNTER DAYS

Game Management Division	1979		1980		1981		
	Total	Percent of Total	Total	Percent of Total	Total	Percent of Total	Days/ Sq.Mi.
Grassland (21,356 sq. mi. - 15%)	8,258	11.5	6,377	8.4	7,848	11.4	.37
Farmland (47,261 sq. mi. - 33%)	31,516	44.0	33,667	44.5	29,883	43.3	.63
Parkland (35,202 sq. mi. - 24%)	20,037	28.0	21,812	28.9	19,418	28.1	.55
Commercial Forest (minus Zone 34) (39,880 sq. mi. - 28%)	11,780	16.6	13,451	17.8	11,164	16.2	.28
TOTAL * (143,699 sq. mi. - 100%)	71,591	100.0	75,307	99.6	68,313	99.0	.48

* Zone 34 and Shield excluded because of insignificance to recreational game bird hunting. (< 1% of hunter days)

Table 5: Saskatchewan Game Bird Harvest, 1981 vs 1980

Species	No. of Birds Reported Bagged		
	1980	1981	% Change
Ducks	398,000	240,000	-40
Geese	185,000	159,000	-14
Sandhill Cranes	4,200	2,200	-48
Sharp-tailed Grouse	108,000	83,000	-23
Hungarian Partridge	66,000	64,000	- 3
Ruffed Grouse	92,000	37,000	-60
Spruce Grouse	11,600	5,900	-49
Pheasant	11,800	12,500	+ 8
TOTAL	877,000	607,000	-31

Table 6. Waterfowl Harvest Summarized for Province, 1981.

	SASK. RESIDENT		CAN. RESIDENT		NON RESIDENT		TOTAL	
MALLARD DUCKS	145969	60.88%	20373	8.50%	29612	12.35%	195953	81.73%
OTHER DUCKS	31842	13.28%	4126	1.72%	7832	3.27%	43800	18.27%
TOTAL DUCKS	177810	74.16%	24499	10.22%	37444	15.62%	239753	100.00%
SUCCESSFUL HUNTERS (% OF ACTIVE)	19980	(80.21%)	2191	(86.53%)	2588	(93.77%)	24759	(81.98%)
ACTIVE HUNTERS	24911		2532		2760		30203	
DUCKS/ACTIVE HUNTER	7.1)		9.7		13.6		7.9	
DUCKS/SUCCESSFUL HUNTER	8.9)	3.9 ducks/	11.2		14.5		9.7	
DAYS/ACTIVE HUNTER	1.8)	hunter day	2.6		2.9		2.0	
DAYS/SUCCESSFUL HUNTER	2.2		3.0		3.1		2.4	
DAYS HUNTED *	44948.5		6501.5		8004.5		59454.5	
CANADA GEESE	68164	42.97%	12492	7.87%	11446	7.21%	92101	58.05%
WHITE-FRONTED GEESE	32248	20.33%	4439	2.80%	6003	3.78%	42690	26.91%
SNOW GEESE	14611	9.21%	2589	1.63%	3442	2.17%	20642	13.01%
OTHER GEESE	2504	1.58%	285	0.18%	423	0.27%	3211	2.02%
TOTAL GEESE	117527	74.08%	19804	12.48%	21314	13.43%	158644	100.00%
SUCCESSFUL HUNTERS (% OF ACTIVE)	17897	(77.56%)	2561	(88.25%)	2717	(89.23%)	23175	(79.86%)
ACTIVE HUNTERS	23074		2902		3045		29021	
GEESE/ACTIVE HUNTER	5.1		6.8		7.0		5.5	
GEESE/SUCCESSFUL HUNTER	6.6		7.7		7.8		6.8	
DAYS/ACTIVE HUNTER	1.7		2.1		2.5		1.9	
DAYS/SUCCESSFUL HUNTER	2.3		2.3		2.8		2.3	
DAYS HUNTED *	40365.2		5989.7		7573.2		53928.1	
WATERFOWL (D & G)	295337	74.13%	44304	11.12%	58757	14.75%	398398	100.00%
SUCCESSFUL HUNTERS (% OF ACTIVE)	26734	(85.75%)	3358	(96.74%)	3528	(97.62%)	33620	(87.87%)
ACTIVE HUNTERS	31176	(75% of 1980)	3471		3614		38261	
WATERFOWL/ACTIVE HUNTER	9.5		12.8		16.3		10.4	
WATERFOWL/SUCCESSFUL HUNTER	11.0		13.2		16.7		11.9	
DAYS/ACTIVE HUNTER	2.4		3.1		3.7		2.6	
DAYS/SUCCESSFUL HUNTER	2.8		3.2		3.8		2.9	
DAYS HUNTED *	73887.8		10883.8		13296.3		98067.3	

* HALF DAY = HALF DAY.

Table 7. Upland Harvest Summarized for Province, 1981.

	SASK. RESIDENT		CAN. RESIDENT		NON RESIDENT		TOTAL	
SHARP-TAILED GROUSE								
KILL	71127	85.96%	6374	7.70%	5244	6.34%	82745	100.00%
SUCCESSFUL HUNTERS (% OF ACTIVE)	15538	(71.90%)	1167	(74.55%)	1001	(77.85%)	17705	(72.38%)
ACTIVE HUNTERS	21611	(89%)	1565	(6%)	1285	(5%)	24461	
BIRDS/ACTIVE HUNTER	3.3		4.1		4.1		3.4	
BIRDS/SUCCESSFUL HUNTER	4.6		5.5		5.2		4.7	
DAYS/ACTIVE HUNTER	1.6		1.7		1.9		1.6	
DAYS/SUCCESSFUL HUNTER	2.2		2.2		2.4		2.2	
DAYS HUNTED *	33652.0		2617.0		2441.0		38710.1	
HUNGARIAN PARTRIDGE								
KILL	56439	87.71%	4382	6.81%	3528	5.48%	64349	100.00%
SUCCESSFUL HUNTERS (% OF ACTIVE)	12567	(71.35%)	967	(82.93%)	681	(81.44%)	14216	(72.45%)
ACTIVE HUNTERS	17613		1167		837		19614	
BIRDS/ACTIVE HUNTER	3.2		3.8		4.2		3.3	
BIRDS/SUCCESSFUL HUNTER	4.5		4.5		5.2		4.5	
DAYS/ACTIVE HUNTER	1.4		1.8		1.6		1.4	
DAYS/SUCCESSFUL HUNTER	2.0		2.2		2.0		2.0	
DAYS HUNTED *	24899.9		2105.6		1354.2		28359.8	
RUFFED GROUSE								
KILL	34208	93.18%	967	2.64%	1535	4.18%	36711	100.00%
SUCCESSFUL HUNTERS (% OF ACTIVE)	9013	(67.41%)	313	(55.00%)	371	(70.49%)	9697	(67.04%)
ACTIVE HUNTERS	13371		569		526		14466	
BIRDS/ACTIVE HUNTER	2.6		1.7		2.9		2.5	
BIRDS/SUCCESSFUL HUNTER	3.8		3.1		4.1		3.8	
DAYS/ACTIVE HUNTER	1.5		1.6		1.8		1.5	
DAYS/SUCCESSFUL HUNTER	2.3		3.0		2.5		2.3	
DAYS HUNTED *	20431.5		924.8		940.2		22296.4	

Table 7. Continued.

	SASK. RESIDENT		CAN. RESIDENT		NON RESIDENT		TOTAL	
SPRUCE GROUSE								
KILL	5789	98.53%	0	0.0%	86	1.47%	5876	100.00%
SUCCESSFUL HUNTERS (% OF ACTIVE)	1501	(50.78%)	0	0.0%	52	(75.00%)	1553	(50.85%)
ACTIVE HUNTERS	2956		28		69		3053	
BIRDS/ACTIVE HUNTER	2.0		0.0		1.2		1.9	
BIRDS/SUCCESSFUL HUNTER	3.9		0.0		1.7		3.8	
DAYS/ACTIVE HUNTER	1.4		0.5		1.4		1.4	
DAYS/SUCCESSFUL HUNTER	2.7		0.0		1.9		2.7	
DAYS HUNTED *	4070.2		14.2		99.2		4183.6	
ALL UPLAND GAME BIRDS								
KILL	167564	88.34%	11723	6.18%	10394	5.48%	189681	100.00%
SUCCESSFUL HUNTERS (% OF ACTIVE)	23280	(80.94%)	1480	(85.25%)	1380	(83.77%)	26140	(81.31%)
ACTIVE HUNTERS	28763		1736		1647		32147	
BIRDS/ACTIVE HUNTER	5.8		6.8		6.3		5.9	
BIRDS/SUCCESSFUL HUNTER	7.2		7.9		7.5		7.3	
DAYS/ACTIVE HUNTER	2.1		2.4		2.5		2.1	
DAYS/SUCCESSFUL HUNTER	2.6		2.9		3.0		2.6	
DAYS HUNTED *	60608.6		4239.7		4140.3		68988.6	

* HALF DAY = HALF DAY.

MIGRATORY BIRDS

INTRODUCTION

The federal Canadian Wildlife Service is primarily responsible for migratory birds, although they are managed in Saskatchewan in consultation with this provincial authority. The Canadian Wildlife Service directly collects much of the prerequisite data. Their migratory game bird hunter survey is overlapped by the Saskatchewan Game Bird Hunter Survey (Appendix 3), which is reported on herein.

The 1981 waterfowl hunting season dates and bag limits (Appendix 2) fell within a framework of stabilized regulations in effect for five years (Anonymous, 1979).

DUCKS

1981 Hunting

The regulations (Appendix 2) were stable last fall but that's all that was — duck hunting "crashed", as discussed in the first chapter of this report. The duck harvest declined accordingly to 240,000 (196,000 mallards) from approximately 400,000 (320,000 mallards) in 1980 (Figure 5, Table 6). Both harvests are very small relative to the 1970's. The drier 1960's, however, produced many duck harvests between 300,000 and 500,000 and the all-time recorded low of 170,000 in 1962. Reduced success and the sharp drop in hunter activity combined to produce the low harvest.

The drought of the last two years underlies the poor 1981 duck hunting. Two years of very poor duck reproduction have been recorded (Nieman and Barber, 1982). Many waterbodies dried up, restricting duck distribution.

The geographic distribution of duck hunting and harvest is illustrated in Table 8 and Figure 6. Typically, the heaviest harvest occurred in the center of the agricultural region, in Zones 11 and 10.

Duck harvest chronology is presented in Figure 7. The traditional pattern of relatively heavy hunting/harvest during early-mid October is evident.

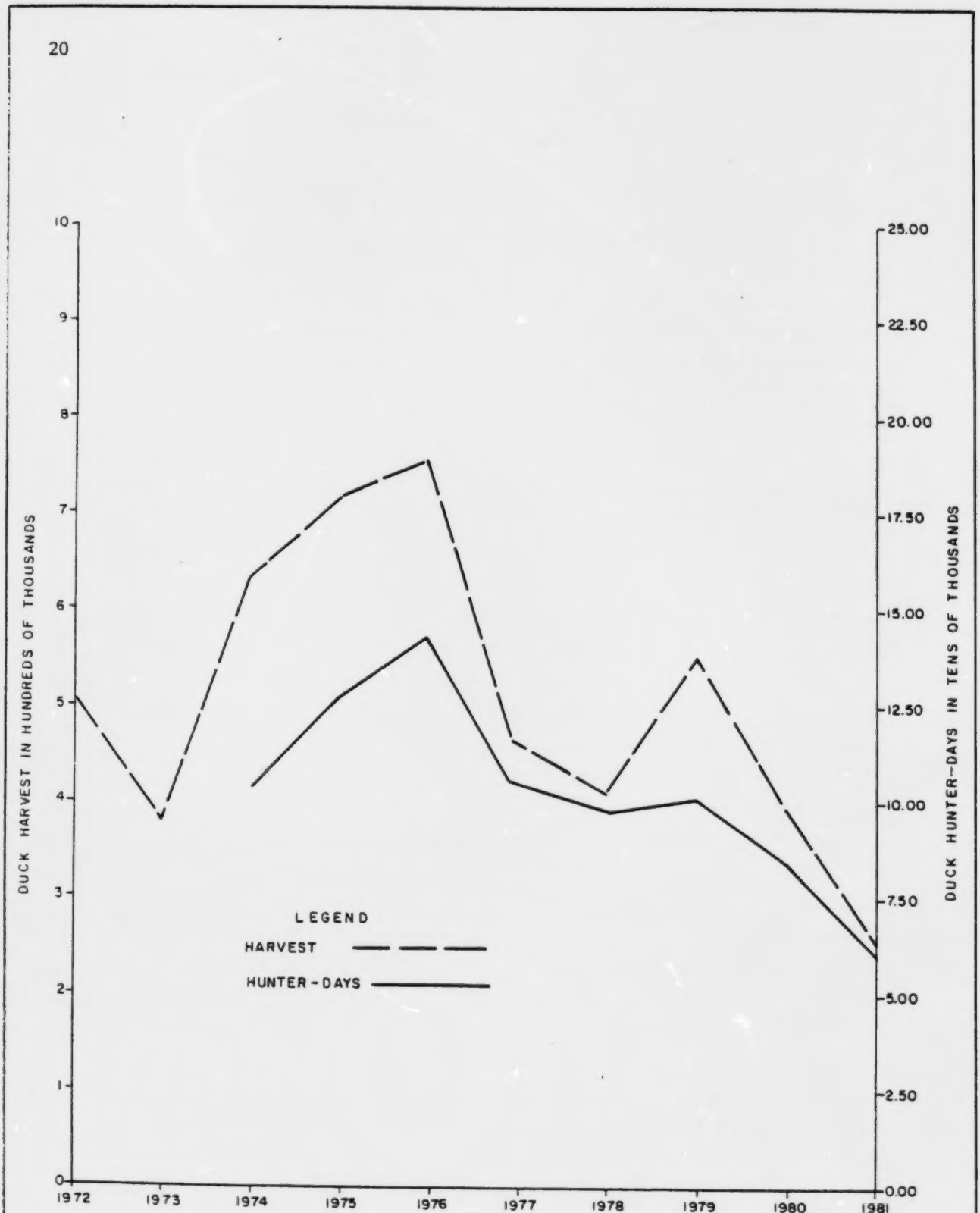


Figure 5 Duck Hunter-Days And Harvest, 1972-1981

Table 8. Saskatchewan Duck Harvest and Hunting Pressure by Game management Zone - 1981

GMZ	TOTAL KILL	% OF HARVEST	ACTIVE HUNTERS	BIRDS PER SQ. MILE	HUNTER DAYS PER BIRD*	TOTAL HUNTER DAYS	DUCK HUNTER DAYS
1	4542	1.89	454	1.721	0.29	1327	1201
2	713	0.30	217	0.151	0.50	355	257
3	2338	0.98	294	0.607	0.48	1130	542
4	621	0.26	159	0.360	0.69	427	224
5	2644	1.10	540	0.915	0.88	2314	635
6	7999	3.34	2533	1.449	1.81	14490	3161
7	10861	4.53	1908	1.566	0.43	4626	3113
8	6317	2.63	1468	0.751	0.41	2570	1962
9	11048	4.61	2259	1.812	0.35	3850	3010
10	20823	8.69	2890	4.520	0.35	7251	4646
11	20746	8.65	2691	10.569	0.30	6239	4382
12	10805	4.51	1802	1.906	0.41	4444	2604
13	19303	8.05	3507	2.781	0.36	6925	5457
14	5483	2.29	1031	1.572	0.84	4615	1250
15	8371	3.49	1119	2.662	0.35	2941	1735
16	3820	1.59	653	0.767	0.41	1583	966
17	3958	1.65	636	1.503	0.30	1177	930
18	6541	2.73	769	2.067	0.25	1645	1377
19	16008	6.68	2355	2.966	0.37	5905	4071
20	11701	4.88	1503	3.475	0.37	4272	3012
21	15964	6.66	2569	2.497	0.34	5496	3782
22	18843	7.86	2653	2.033	0.29	5397	4266
23	5665	2.36	932	1.110	0.40	2263	1498
24	937	0.39	210	0.468	0.50	469	274
25	292	0.12	76	0.199	0.46	134	79
26	2247	0.94	290	1.323	0.32	716	451
27	3148	1.31	183	0.816	0.14	451	398
28	2803	1.17	430	0.586	0.34	956	709
29	0	0.0	17	0.0	0.0	21	13
30	9820	4.10	1161	2.115	0.25	2471	2062
31	451	0.19	67	0.107	0.28	125	112
32	2124	0.89	376	0.600	0.32	686	576
33	986	0.41	163	0.292	0.34	338	243
34	1191	0.50	134	0.078	0.21	249	249
35	243	0.10	50	0.071	0.30	72	72
36	352	0.15	58	0.014	0.24	85	84
37	42	0.02	25	0.001	1.31	55	51
	239750	100.00	38182	0.968	0.41	98070	59454

* Hunter Days are based on all waterfowl hunting. Half day = Half Day. Refer to Appendix A for Square Miles Per GMZ.

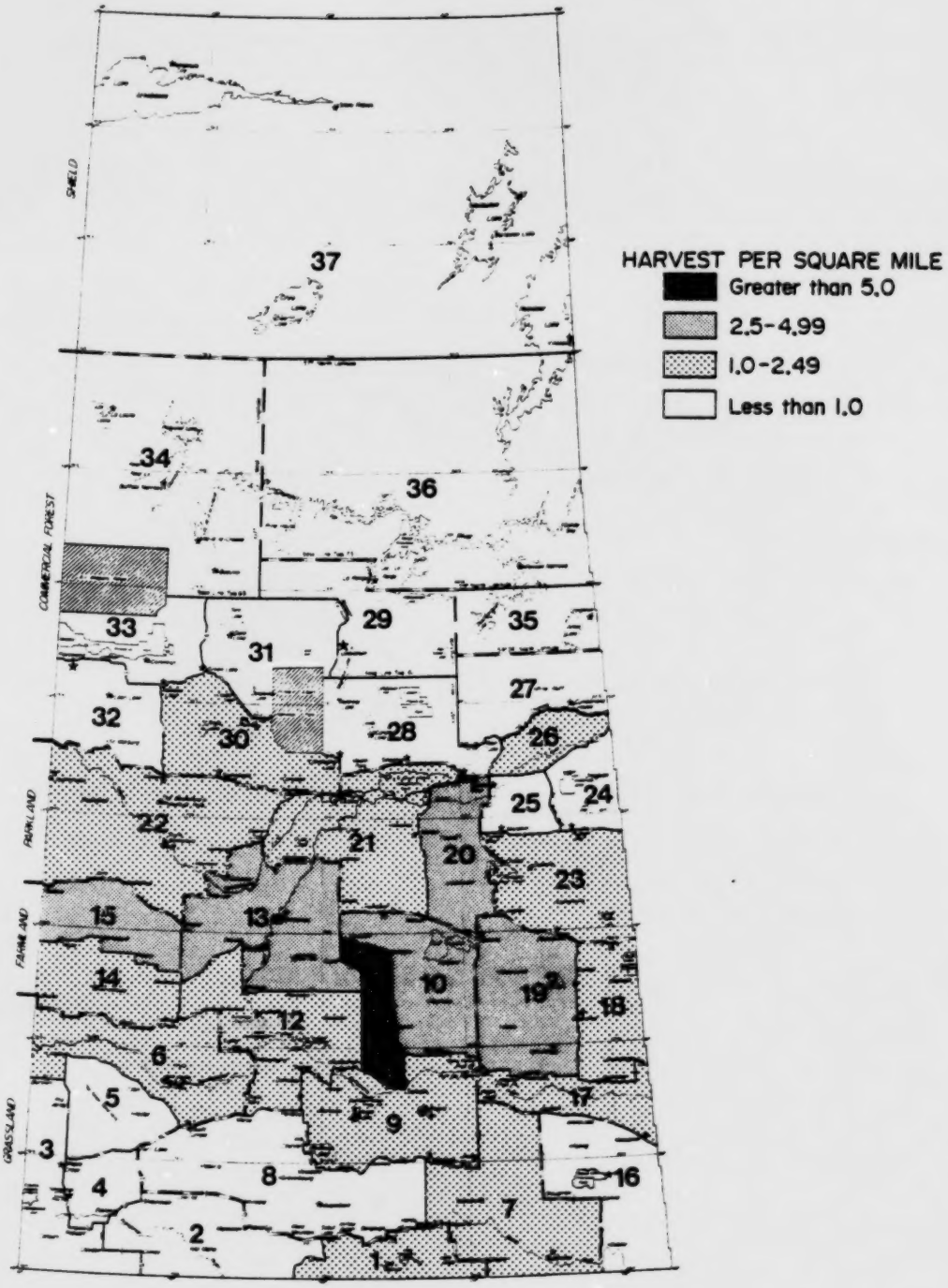


Figure 6. Saskatchewan Duck Harvest Density, 1981.

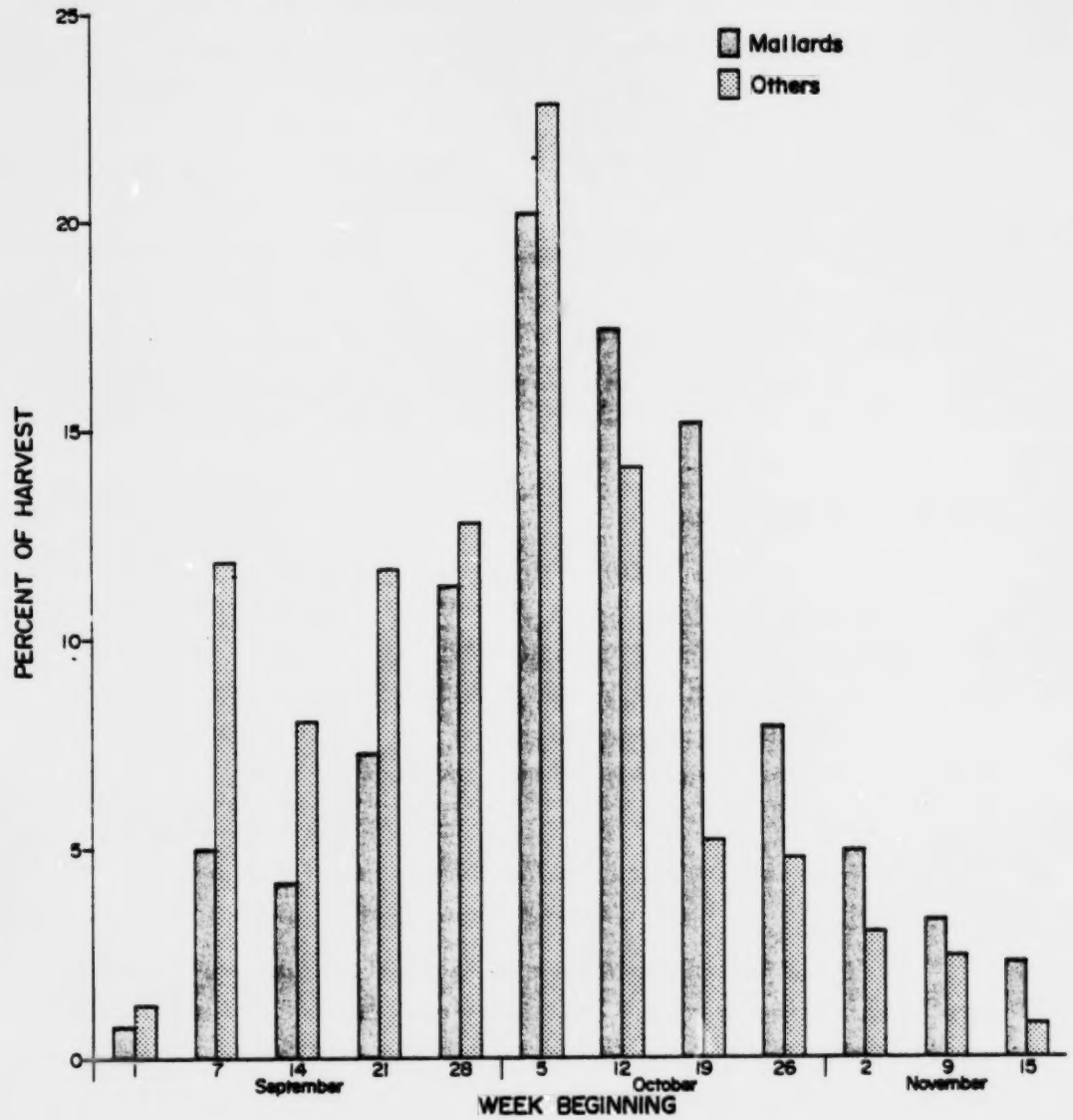


Figure 7. Saskatchewan 1981 Duck Harvest by Weekly Intervals.

1982 Populations

Waterfowl populations in agricultural Saskatchewan increased sharply in spring 1982, in response to much-improved water conditions. The May pond index returned to "normal" (2.2 million) and was 251 percent above the 1980 level (Benning, 1982). The overall number of ducks was up 44 percent from 1980, while mallards increased by 32 percent to 2 million. Both parameters were still 14 percent below the average of the preceding ten years.

The good spring waterfowl habitat conditions in southern Saskatchewan were maintained into July by abundant precipitation. (Benning, pers. comm.) The expected good duck production didn't fully materialize, however. Unusually cold, wet weather during May apparently suppressed reproduction.

1982 Hunting Regulations

Duck season lengths and bag limits are unchanged from recent years (Appendix 8). The seasons commence in early September and end in early December; the traditional 8:16 bag limits apply. These regulations are in accordance with the 5 year stabilized regulations in effect (Apppendix 9) and the recommendation of the Saskatchewan Migratory Bird Technical Advisory Committee (Nieman and Barber, 1982).

GEESE

1981 Hunting

Goose hunting continued to be a bright spot in Saskatchewan game bird hunting in 1981. The traditional seasons and bag limits applied (Appendix 2). The amount of hunting declined somewhat, probably due to the influence of poor duck hunting, as previously discussed (Figure 8) (Table 6). Goose hunter success remained high at almost 3 geese bagged/goose hunter day. The provincial harvest dropped to 159,000, which is still a historically high level.

Goose hunting is still highly concentrated in the west-central and central portions of agricultural Saskatchewan (Table 9) (Figure 9). The recent drought dried up many important staging lakes in the Kindersley-Kerrobert area, shifting large numbers of geese and associated hunting to Zone 6, flanking the South Saskatchewan River.

The seasonal timing of peak goose hunting/harvest is similar but slightly earlier than that of ducks (Figure 10) (Table 9).

Canada geese made up roughly 60 percent (92,000) of the 1981 Saskatchewan goose harvest, based on the Saskatchewan Game Bird Hunter Survey (Table 6). These are mostly small Arctic races but the growing populations of large prairie geese are probably becoming more significant in the harvest. The popular white-fronted goose formed 27 percent of the provincial harvest. White geese, including snow and Ross' geese, comprised only 15 percent of the bag.

1982 Populations

Arctic and prairie goose populations are at relatively high levels (Nieman and Barber, 1982). They have generally undergone many years of steady growth under stable hunting regulations. Reproductive success, and consequently hunting success, varies considerably from year to year, due to variable weather during the breeding season.

1982 Hunting Regulations

Season dates and bag limits are unchanged this year except for minor adjustments to the former (Appendix 8).

SANDHILL CRANES

1981 Hunting

A short hunting season was open at the beginning of September, as usual (Appendix 2). Hunting and harvest were reduced by early closure of the hunting season in a portion of Zone 10, prompted by the observation of whooping cranes there. The provincial harvest of 2,200 sandhill cranes was approximately half that taken in 1980 (Table 10). Seven hundred (700) successful crane hunters and 900 hunter-days were involved.

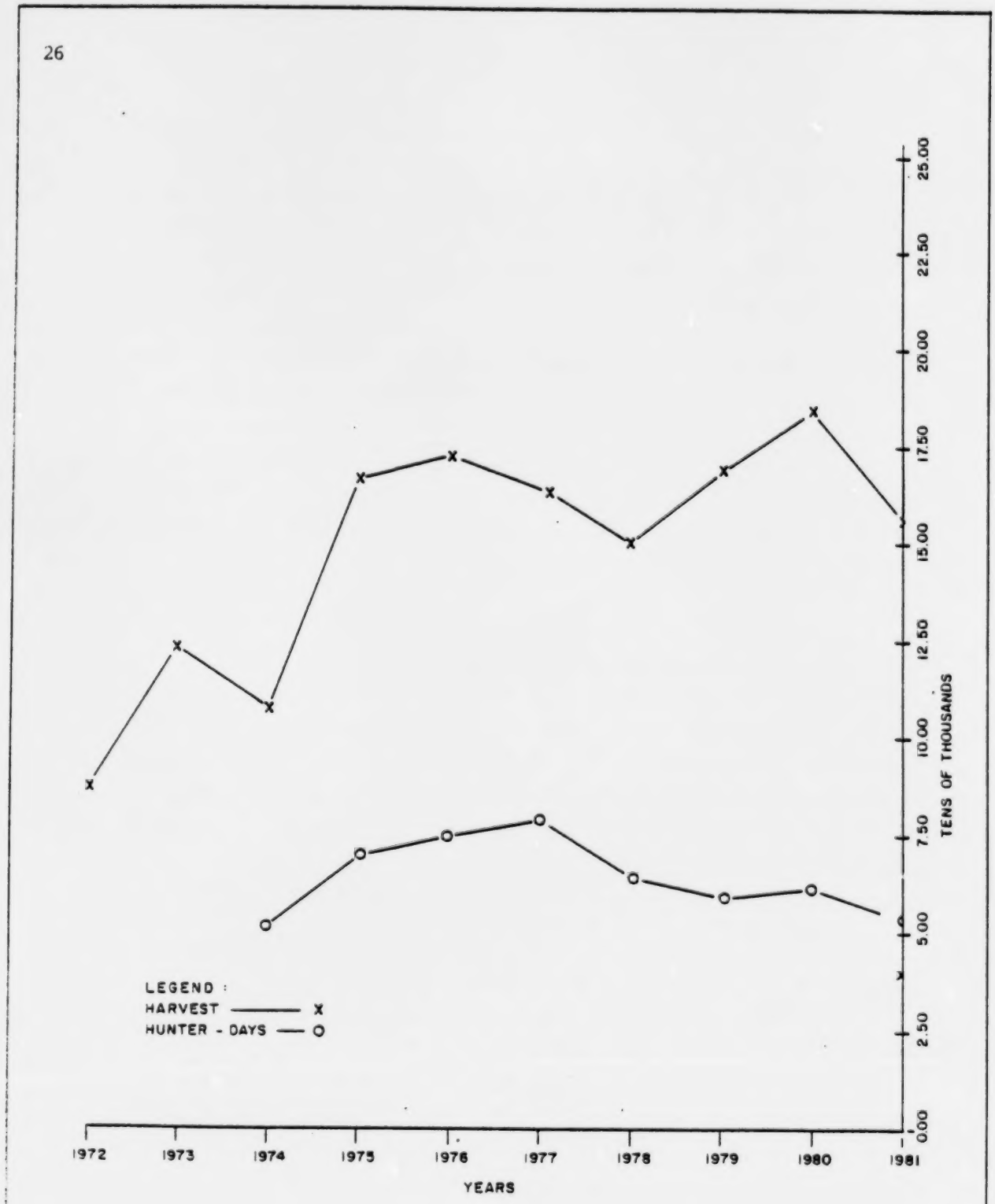


Figure 8 Goose: Hunter-Days And Harvest 1972-81

Table 9. Saskatchewan Goose Harvest and Hunting Pressure by Game Management Zone - 1981

GMZ	TOTAL KILL	% OF HARVEST	ACTIVE HUNTERS	BIRDS PER SQ. MILE	HUNTER DAYS PER BIRD*	TOTAL HUNTER DAYS*	GOOSE HUNTER DAYS
1	286	0.18	137	0.108	4.64	1327	207
2	280	0.18	118	0.059	1.27	355	118
3	2492	1.57	420	0.647	0.45	1130	773
4	958	0.60	160	0.555	0.45	427	271
5	7531	4.75	1196	2.606	0.31	2314	2023
6	50551	31.87	7003	9.159	0.29	14490	13358
7	5549	3.50	1571	0.800	0.83	4626	2427
8	1849	1.17	757	0.220	1.39	2570	903
9	2590	1.63	1261	0.425	1.49	3850	1443
10	9859	6.21	2742	2.140	0.74	7251	4183
11	8094	5.10	2040	4.123	0.77	6239	3127
12	6506	4.10	1673	1.148	0.68	4444	2537
13	4813	3.03	1742	0.693	1.44	6925	2037
14	16651	10.50	2230	4.774	0.28	4615	4220
15	8280	5.22	1212	2.633	0.36	2941	1935
16	2537	1.60	700	0.510	0.62	1583	884
17	611	0.39	362	0.232	1.93	1177	407
18	729	0.46	485	0.230	2.26	1645	510
19	6385	4.02	1873	1.183	0.92	5905	2874
20	4322	2.72	1302	1.284	0.99	4272	1959
21	5481	3.45	1830	0.857	1.00	5496	2502
22	4522	2.85	1270	0.488	1.19	5397	1651
23	2208	1.39	814	0.433	1.02	2263	1148
24	968	0.61	238	0.484	0.48	469	307
25	224	0.14	93	0.152	0.60	134	87
26	670	0.42	268	0.395	1.07	716	403
27	432	0.27	127	0.112	1.04	451	144
28	857	0.54	341	0.179	1.12	956	416
29	110	0.07	25	0.021	0.19	21	13
30	1276	0.80	477	0.275	1.94	2471	675
31	80	0.05	43	0.019	1.56	125	41
32	467	0.29	177	0.132	1.47	686	165
33	456	0.29	122	0.135	0.74	338	144
34	17	0.01	34	0.001	14.65	249	25
35	0	0.0	0	0.0	0.0	72	0
36	0	0.0	8	0.0	0.0	85	4
37	0	0.0	8	0.0	0.0	55	4
	158641	100.0	34859	0.640	0.62	98070	53925

* Hunter Days are based on all waterfowl hunting. Half Day = Half Day. Refer to Appendix A for Square Miles per GMZ.

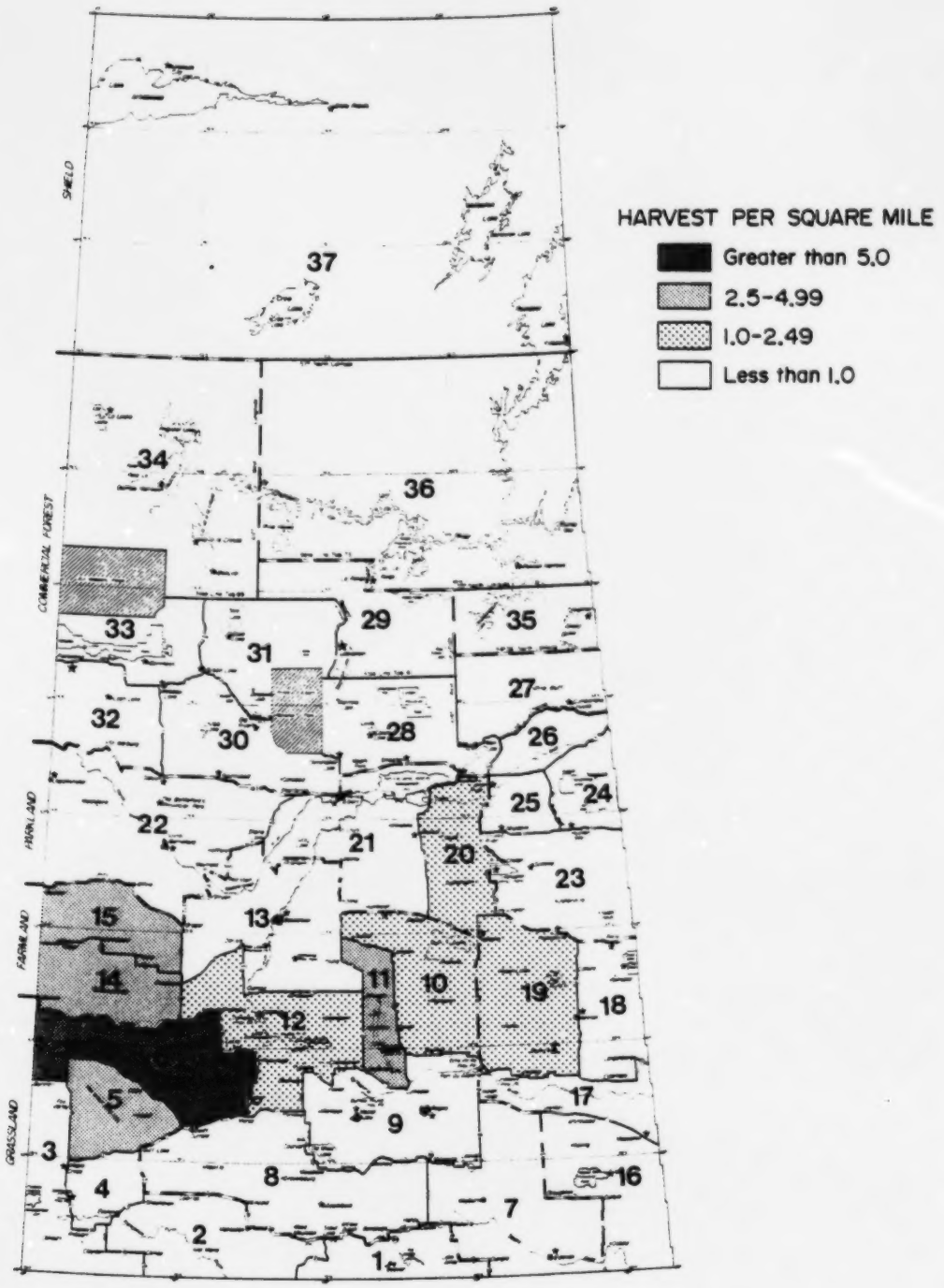
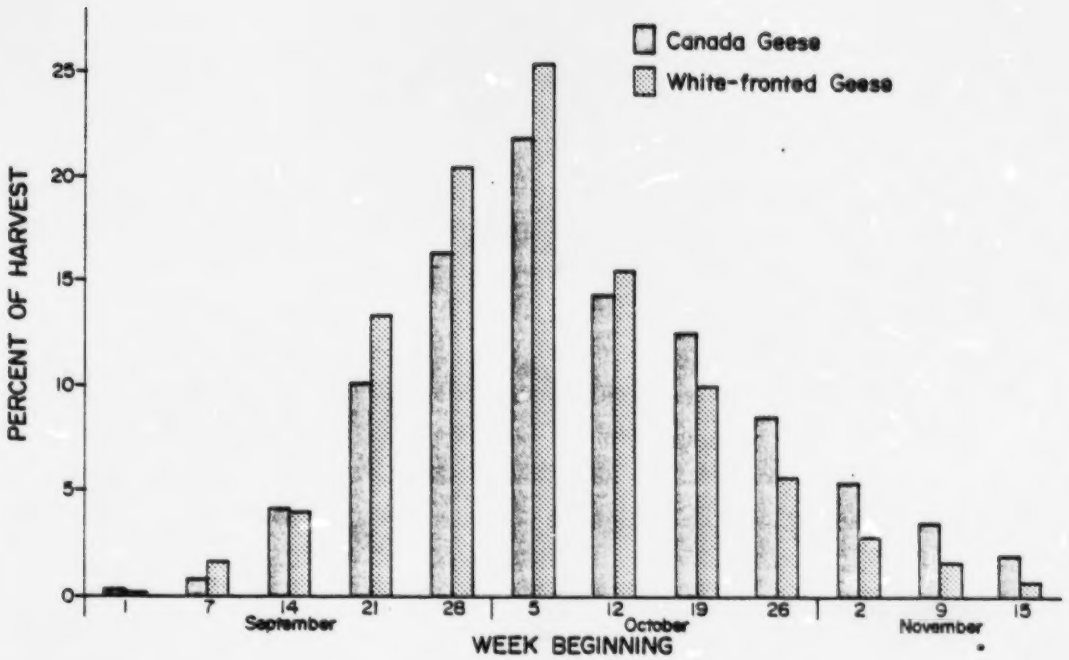


Figure 9. Saskatchewan Goose Harvest Density, 1981



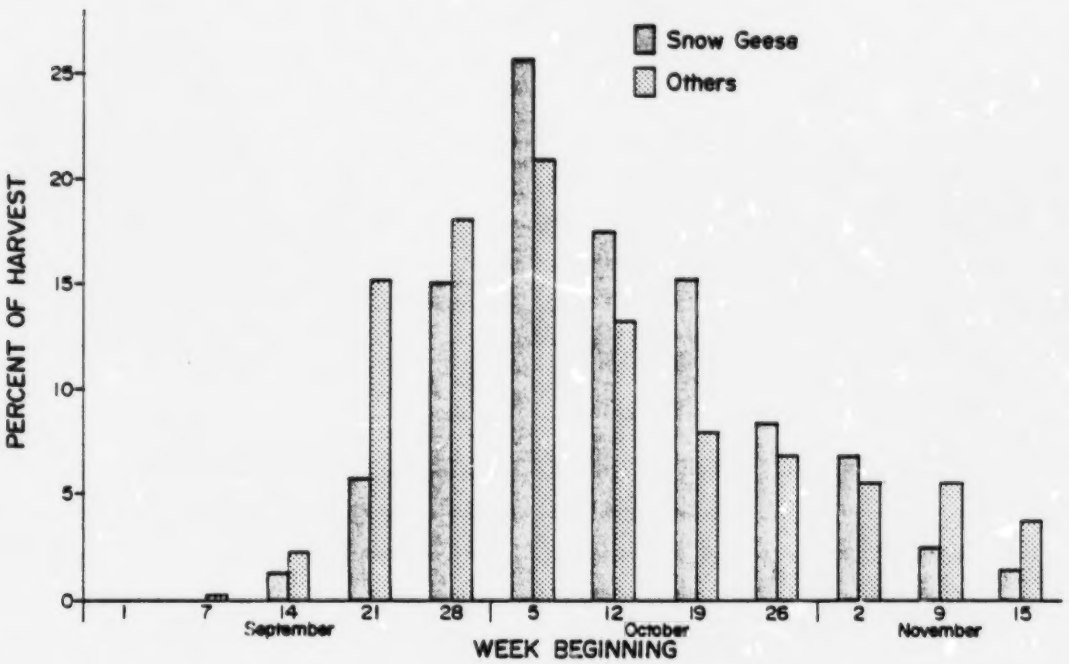


Figure 10 Saskatchewan 1981 Goose Harvest by Weekly Intervals.

Table 10. Saskatchewan Sandhill Crane Harvest by Zone - 1981.

ZONE	% OF HARVEST	HARVEST	SUCC. HUNTERS	CRANES/ HUNTER	HUNTER DAYS*	ZONE
1	0.0	0	0	0.0	0	1
2	0.0	0	0	0.0	0	2
3	0.0	0	0	0.0	0	3
4	0.0	0	0	0.0	0	4
5	0.0	0	0	0.0	0	5
6	16.21	360	79	4.56	156	6
7	0.0	0	0	0.0	0	7
8	0.0	0	0	0.0	0	8
9	0.0	0	0	0.0	0	9
10	36.24	805	253	3.18	317	10
11	40.75	905	280	3.23	313	11
12	3.78	84	35	2.40	22	12
13	1.53	34	17	2.00	52	13
14	0.0	0	0	0.0	0	14
15	0.0	0	0	0.0	0	15
16	0.0	0	0	0.0	0	16
17	0.0	0	0	0.0	0	17
18	0.0	0	0	0.0	0	18
19	0.36	8	9	0.89	35	19
20	0.0	0	0	0.0	0	20
21	1.13	25	9	2.78	9	21
22	0.0	0	0	0.0	0	22
23	0.0	0	0	0.0	0	23
24	0.0	0	0	0.0	0	24
25	0.0	0	0	0.0	0	25
26	0.0	0	0	0.0	0	26
27	0.0	0	0	0.0	0	27
28	0.0	0	0	0.0	0	28
29	0.0	0	0	0.0	0	29
30	0.0	0	0	0.0	0	30
31	0.0	0	0	0.0	0	31
32	0.0	0	0	0.0	0	32
33	0.0	0	0	0.0	0	33
34	0.0	0	0	0.0	0	34
35	0.0	0	0	0.0	0	35
36	0.0	0	0	0.0	0	36
37	0.0	0	0	0.0	0	37
TOTALS	100.0	2221	682	3.26	904	TOTALS

* HALF DAY = HALF DAY.
FOR SAMPLE SIZE, SEE TABLE 56.

1982 Populations

The large size and increased numbers of the mid-continent sandhill crane population is being better appreciated all the time. The annual North American harvest of 10,000 - 15,000 is apparently well within the sustainable yield of the population.

1982 Hunting Regulations

The hunting season and bag limits are essentially unchanged from those of recent years (Appendix 8). The presence in Saskatchewan of whooping cranes later in the fall makes it difficult to safely lengthen the sandhill crane hunting season, even though this is biologically possible. Non-residents will be allowed to hunt sandhill cranes in 1982.

GENERAL

1981 Hunting

Regulations were static but waterfowl hunting suffered last year due to drought, as previously discussed. Recreation and harvest were at about 75 percent of 1980 levels.

1982 Populations

Numbers of ducks breeding in southern Saskatchewan are generally higher than in 1980, attracted by changes in water supply. However, duck numbers are below the long term average because of two years of drought - induced poor reproduction. Goose and sandhill crane populations are large and healthy.

1982 Hunting Regulations

The basic hunting regulations, set by federal authority, are unchanged in 1982 as previously discussed (Appendix 8).

Saskatchewan is responsible for the 500 metre lake hunting restrictions, which pertain to goose hunting. Some minor alterations are being made to the current network of restrictions.

The 500 metre restriction on the upper reaches of the North Saskatchewan River is not required and has been removed. Fall aerial

surveys during 1979 and 1980 revealed significant numbers of large Canada geese on the river but relatively low concentrations above the Payton Bridge (Table 11). Waterfowl staging there are not vulnerable to river hunting because of the general inaccessibility of the river and their ability to move laterally along it to other habitat. Removal of the long standing restriction will open up approximately 100 miles of river valley to high quality, esthetically pleasing game bird hunting.

Relatively high concentrations of large Canada geese in the vicinity of North Battleford and downstream to Borden (Table 11) deserve continuing protection. This stretch of the North Saskatchewan River is also more accessible and probably subject to higher hunting pressure.

There has been sportsman agitation to extend the 500 metre restriction downstream from Borden but this is not necessary. Goose concentrations are even lower along this portion of the river than above North Battleford. The highest concentrations are in the immediate vicinity of Prince Albert, suggesting that human activity is having no influence on goose distribution.

Finally, a delayed (i.e., goose season) 500 metre hunting limit is being established on Boulder Lake, located just north of Last Mountain Lake in Zone 11. There has been persistent, local pressure to do this, and the fall waterfowl population detected in 1981 supports such a move (Appendix .10). Local landowners interviewed this spring were generally receptive to the idea; the area does not have a major crop depredation problem.

TABLE 11, North Saskatchewan River (Borden-Alberta)
Goose (large Canada) Survey, Fall 1979-80)

Check points	Linear Miles	1979 Oct. 23 No. of Birds	1979 Oct. 23 Birds Linear/Mi.	1980 Sept. 11 No. of Birds	1980 Sept. 11 Birds Linear/Mi.	1980 Oct. 3 No. of Birds	1980 Oct. 3 Birds Linear/Mi.	1980 Oct. 19-22 No. of Birds	1980 Oct. 19-22 Birds Linear/Mi.	Overall Birds/ Linear Mi.
0-1	11.6	250	12.5	504	43.4	545	47.0	700	60.3	39
1-2	8.3			180	21.7	970	116.9	180	21.7	42
2-3	8.3	110	13.3	981	118.2	605	72.9	560	67.5	68
3-4	8.3	-	-	503	60.6	510	61.4	-	-	31
4-5	6.6	70	10.6	552	83.6	60	9.1	1017	154.1	64
5-6	7.5	215	28.7	82	10.9	-	-	-	-	10
6-7	10.8	321	29.7	715	66.2	865	80.1	150	13.9	47
Borden to N.Battleford	61.4	966	15.7	3517	57.3	3555	57.9	2607	42.5	44.3
7-8	11.6	28	24.1	280	24.1	185	15.9	440	37.9	26
8-9	12.5	60	4.8	367	29.4	1100	88.0	360	28.8	38
9-10*	6.6	45	6.8	622	94.2	520	78.8	200	30.3	53
*10-11	11.6	30	2.6	344	29.7	445	38.4	550	47.4	30
11-12	10.8	33	3.1	559	51.8	-	-	215	19.9	19
12-13	12.5	-	-	360	28.8	390	38.4	-	-	17
13-14	14.1	-	-	220	15.6	125	8.9	65	4.6	7
14-15	13.3	287	21.6	70	5.3	35	2.6	75	5.6	9
15-16	20.0	710	35.5	530	26.5	485	24.3	155	7.6	23
N. Battleford to Alberta	113	1193	10.6	3352	29.7	3285	29.1	2060	18.2	21.9
TOTAL	174.4	2159	29.6	6869	39.4	6840	39.2	4667	26.8	29.4

* Payton Bridge

SHARP-TAILED GROUSE

1981 HUNTING AND REPRODUCTION

Conventional seasons and bag limits applied to sharp-tailed grouse in 1981 (Appendix 2).

The provincial harvest declined 24 percent from 1981, to 83,000 (Tables 7 and 12, Figure 11). This represented a 21 percent decline from the average of the preceding ten years.

The reduced sharptail harvest was due to 9 percent less upland game bird hunting and 14 percent less success on sharptails (Table 12). The number of active sharptail hunters dropped to 24,500 from the stable 28,000 of the previous five years.

Duck hunting is believed to be the major factor influencing Saskatchewan upland game bird hunting; poor duck hunting last fall likely reduced upland game bird hunting. This is indicated in that there is a significant positive correlation ($r = 0.81$, $P \leq 0.05$) between waterfowl hunter days and upland game bird hunter days expended between 1977-81, inclusive. This was a period of stable upland game bird hunting regulations. Numbers of duck hunters and sharptail hunters active in Saskatchewan during the last two decades are highly correlated ($r = .84$, $P \leq 0.01$), when the 1974-76 period of highly restrictive upland hunting regulations is excluded.

Sharptail hunting success and harvest dropped "across the board" in 1981; all Game Management Divisions registered declines (Table 13). The Farmland maintained its superiority in harvest and hunting pressure. For the first time in several years, it produced slightly better hunting success than the Grassland.

Zone 13 supported the highest harvest density in the province at 8.1 sharptails/sq. mile of native habitat (Table 14, 15) (Figure 12). The harvest there actually increased, in response to steadily growing hunting pressure, while in most zones it dropped due to less hunting and poorer success.

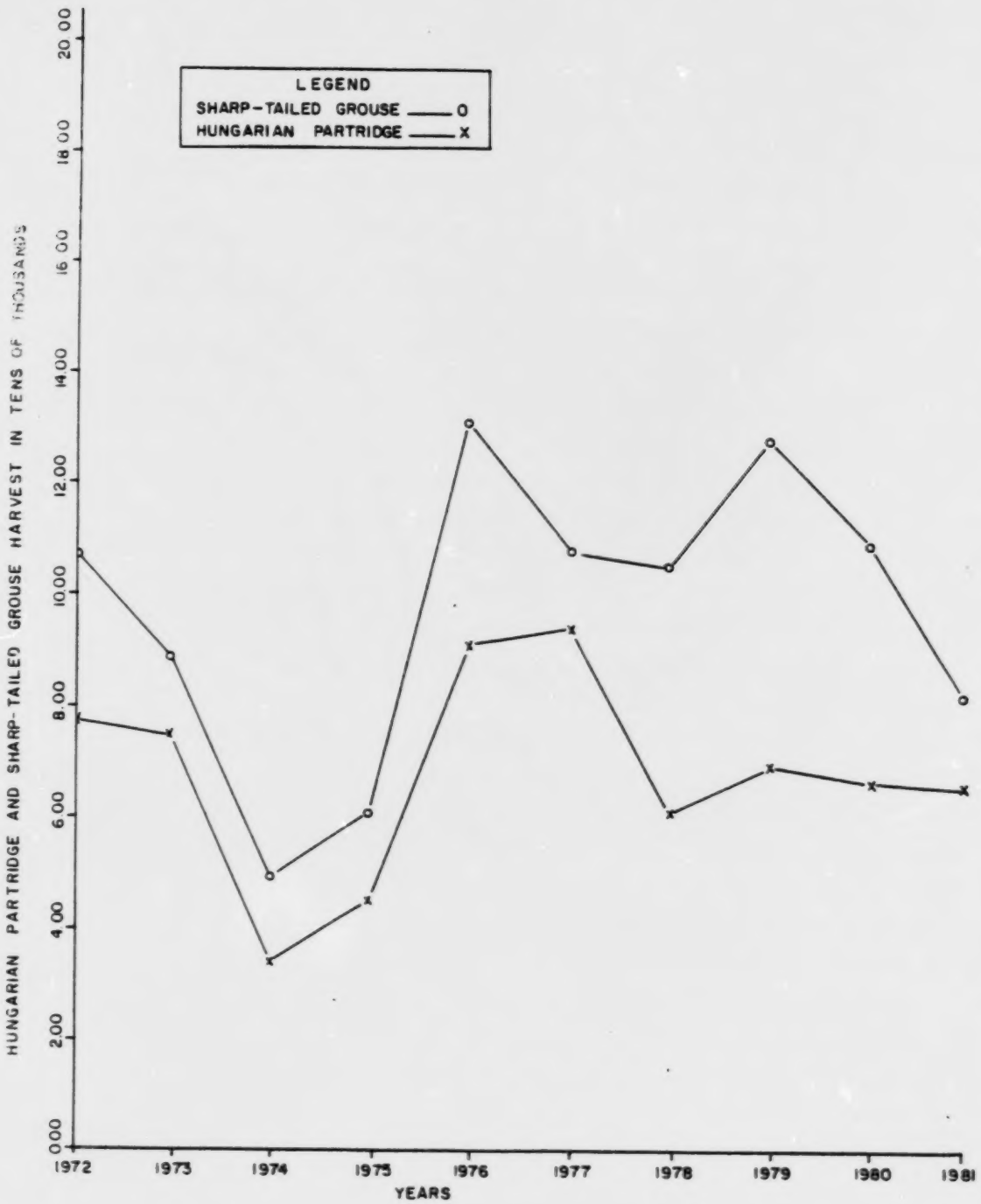


Figure 11 – Saskatchewan Sharp-Tailed Grouse And Hungarian Partridge Harvest, 1972-1981

TABLE 12: SHARP-TAILED GROUSE
Hunting Data for Saskatchewan, 1971-1981

	HUNTING LEVEL				HUNTING SUCCESS	
Year	Active Sharptail Hunters	Upland Bird Hunter Days	Hunter Days/ Active Hunter	Harvest	Kill/ Active Hunter	Kill/ Upland Hunter Day
1971	33,178	87,906	2.6	158,060	4.8	1.8
1972	28,575	56,534	2.0	107,813	3.8	1.9
1973	23,498	53,275	2.3	88,178	3.8	1.7
1974 2/	16,041	37,801	2.4	48,808	3.0	1.2
1975 2/	19,746	48,161	2.4	60,428	3.1	1.1
1976 2/	27,976	86,525	3.1	130,784	4.7	1.5
1977	29,794	93,496	3.1	107,003	3.6	1.1
1978	27,577	72,380	2.6	104,497	3.8	1.4
1979	28,221	72,096	2.6	126,824	4.5	1.8
1980	27,949	75,578	2.7	108,455	3.9	1.4
1981	24,461	68,988	2.8	82,745	3.4	1.2
71-80 Av.	26,256	65,971	2.5	104,085	4.0	1.6
% Change 81 from 80	- 12	- 9	+ 4	- 24	- 13	- 14
% Change 81 vs Av.	- 7	+ 5	+ 12	- 21	- 15	- 25

2/ Erroneous data was published for these years prior to 1979.

The native habitat area information that has just become available for the entire Grassland and Farmland enables a much better appreciation of real upland hunting and harvest pressures. The top five sharptail harvest zones in 1981 had an average harvest of 5.4 sharptails/sq. mile of native habitat (Table 14). Harvests approximating 10 sharptails/sq. mile of native habitat have recently occurred in several Farmland zones. Bag checks planned for the future will permit adjustments (probably downward) of these values, which are based on the mail Hunter Survey, but appreciable harvests are undoubtedly occurring.

Roughly 50% of the sharptail harvest was taken during the first three weeks of the hunting seasons (Figure 13). This is a typical pattern. It reflects the good hunting weather and the relative vulnerability of the birds at this time of year.

Poor sharptail hunting success last fall was fueled by very poor sharptail reproduction (Figure 14, Table 16, Appendix 11). The overall fall age ratio of .77 juveniles/adult (in the bag) is the lowest ever recorded in Saskatchewan. Never before has such poor reproduction been documented two years in a row.

The probably explanation for the poor sharptail reproduction is schematically presented below:

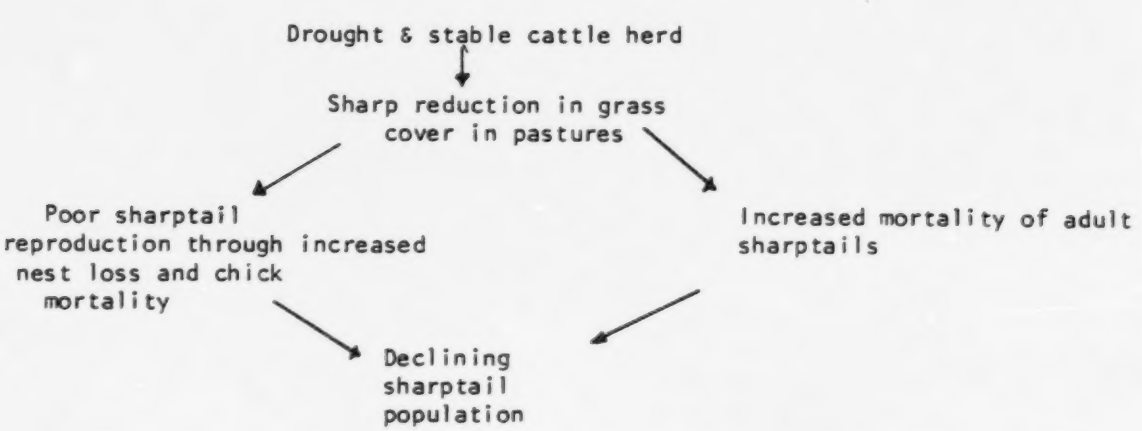

Drought & stable cattle herd
Sharp reduction in grass cover in pastures
Poor sharptail reproduction through increased nest loss and chick mortality
Increased mortality of adult sharptails
Declining sharptail population

TABLE 13 SHARP-TAILED GROUSE
1981 Hunting Data for Saskatchewan,
Compared by Game Management Division

	Grassland	Farmland	Parkland	Commercial Forest 1/	Province 2/
Harvest (% of Total)	10,950 (13.2%)	43,237 (52.3%)	21,021 (25.4%)	7,295 (8.8%)	82,503 (99.7%)
Harvest Pressure (kill/sq.mi.)	.51	.91	.60	.18	.57
Upland Bird Hunter Days (% of Total)	7,848 (11.4%)	29,883 (43.3%)	19,418 (28.1%)	11,164 (16.2%)	68,313 (99%)
Hunting Pressure (hunter days /sq.mi.)	.37	.63	.55	.28	.48
Hunter Success (kill/hunter day)	1.40	1.45	1.08	.65	1.21

1/ Zone 34 excluded because of insignificance to sharp-tailed grouse hunting.

2/ Zone 34 and the Shield Division excluded because of insignificance to sharp-tailed grouse hunting.

Table 14: Most Important Sharp-tailed Grouse Harvest areas in Saskatchewan, 1980 and 1981

	1980				1981			
1/ Rank	Game Mgmt. Zone	Kill/ Sq.Mi. Native Habitat	Kill/ Sq.Mi. Gross Area	% of Prov. Harvest	Game Mgmt. Zone	Kill/ Sq.Mi. Native Habitat	Kill/ Sq.Mi. Gross Area	% of Prov. Harvest
1	11	9.6	2.5	5	13	8.1	1.9	16.0
2	13	7.7	1.8	12	11	5.4	1.4	3.4
3	9	6.7	1.6	9	7	5.0	1.2	10.3
4	7	6.5	1.6	10	16	4.3	1.3	7.8
5	12	5.3	1.2	6	9	4.1	1.0	7.1
Total	Top 5 Zones	6.8	1.6	39	Top 5 Zones	5.4	1.5	42.1

1/ Ranked according to harvest density based on native habitat area;

Table 15. Sharp-tailed Grouse Harvest and Hunting Pressure by Game Management Zone, 1981

GMZ	TOTAL KILL	% OF HARVEST	ACTIVE HUNTERS	BIRDS PER SQ. MILE	HUNTER DAYS PER BIRD*	TOTAL HUNTER DAYS*	SPECIES HUNTER DAYS
1	2405	2.91	527	0.911	0.53	1276	796
2	765	0.92	379	0.162	0.76	585	345
3	761	0.92	367	0.197	0.78	592	369
4	225	0.27	116	0.130	1.07	240	138
5	3796	4.59	1381	1.313	0.59	2228	1717
6	2998	3.62	1517	0.543	0.98	2927	1622
7	8521	10.30	2301	1.228	0.61	5159	3352
8	3092	3.74	1495	0.368	0.99	3055	1508
9	5881	7.11	2213	0.964	0.70	4130	2641
10	2890	3.49	1160	0.627	0.81	2353	1378
11	2820	3.41	1296	1.437	0.96	2702	1552
12	4827	5.83	1711	0.852	0.73	3514	2061
13	13267	16.03	3778	1.911	0.58	7656	5254
14	862	1.04	448	0.247	0.93	804	419
15	1077	1.30	374	0.342	0.47	510	338
16	6487	7.84	1577	1.303	0.63	4057	2405
17	1909	2.31	829	0.725	0.87	1668	1021
18	1612	1.95	837	0.509	1.00	1611	1002
19	2905	3.51	1605	0.538	1.24	3593	1995
20	1310	1.58	617	0.389	1.13	1478	778
21	1922	2.32	1305	0.301	1.37	2634	2398
22	4876	5.89	2115	0.526	0.90	4377	2398
23	1186	1.43	714	0.232	2.36	2795	950
24	125	0.15	146	0.062	4.05	506	110
25	150	0.18	141	1.102	2.07	310	100
26	332	0.40	201	0.196	1.38	459	189
27	33	0.04	40	0.009	3.06	101	54
28	1243	1.50	591	0.260	1.62	2010	648
29	50	0.06	33	0.010	2.70	135	29
30	1832	2.21	686	0.395	1.41	2575	996
31	206	0.25	159	0.049	2.02	416	115
32	1002	1.21	390	0.283	1.04	1045	560
33	1136	1.37	205	0.337	0.71	812	461
34	100	0.12	50	0.007	1.56	156	50
35	100	0.12	41	0.029	1.26	126	33
36	25	0.03	41	0.001	6.08	152	38
37	17	0.02	8	0.000	14.12	240	8
TOTAL	82745	100.00	31404	0.334	0.83	68987	38709

* HUNTER DAYS ARE BASED ON ALL UPLAND HUNTING. HALF DAY = HALF DAY. REFER TO APPENDIX A FOR SQUARE MILES PER GMZ.

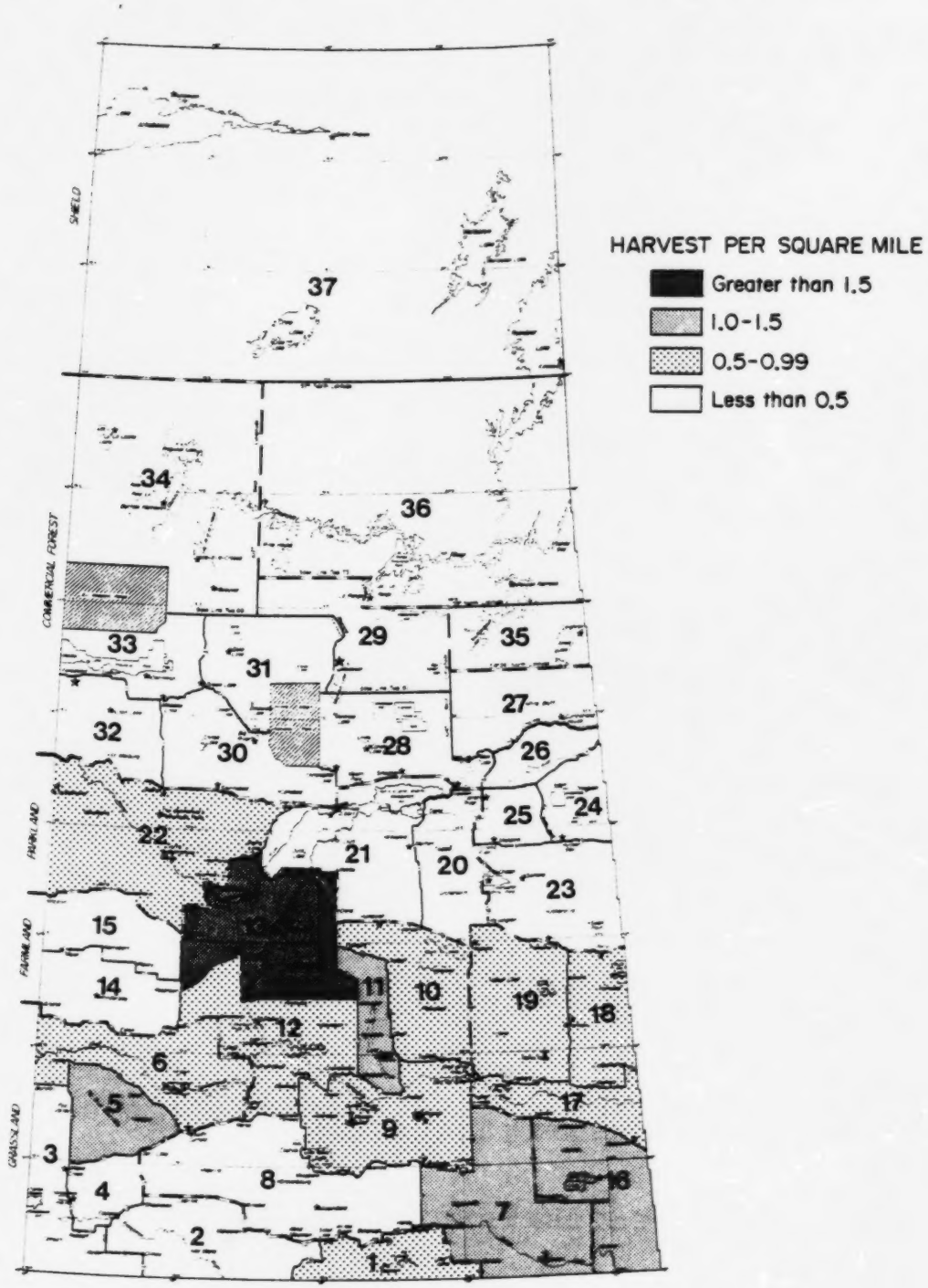
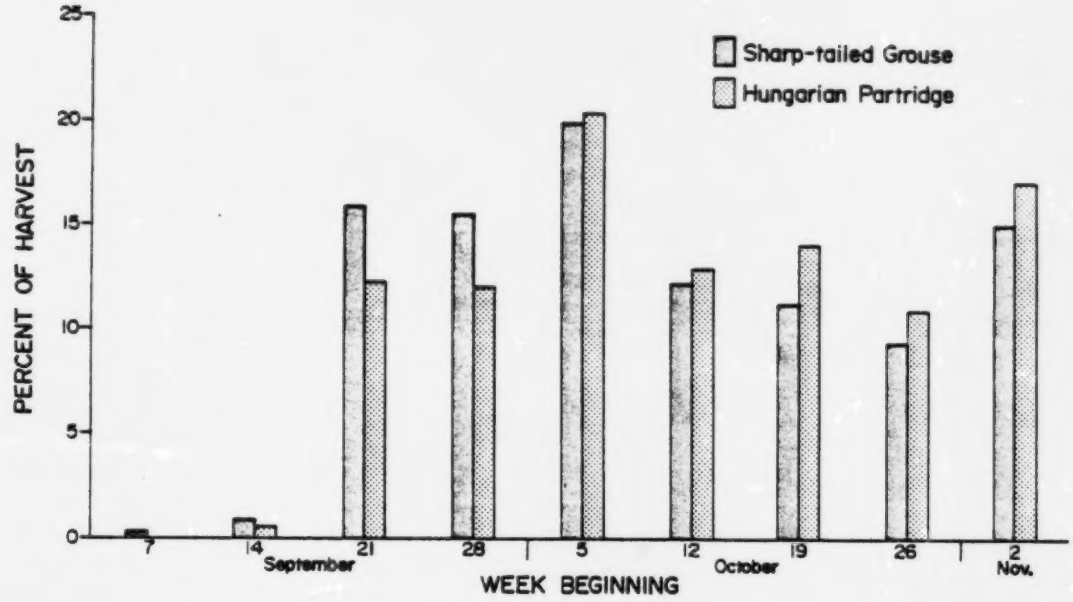


Figure 12 Saskatchewan Sharp-tailed Grouse Harvest Density, 1981



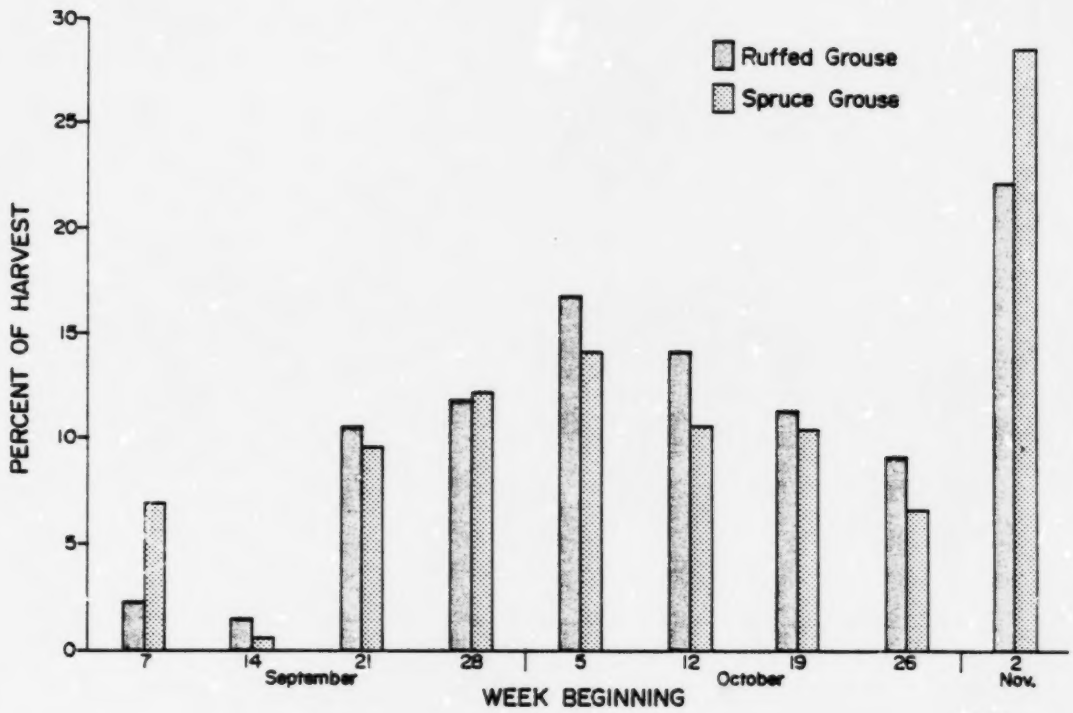


Figure 13 Saskatchewan 1981 Upland Game Bird Harvest by Weekly Intervals

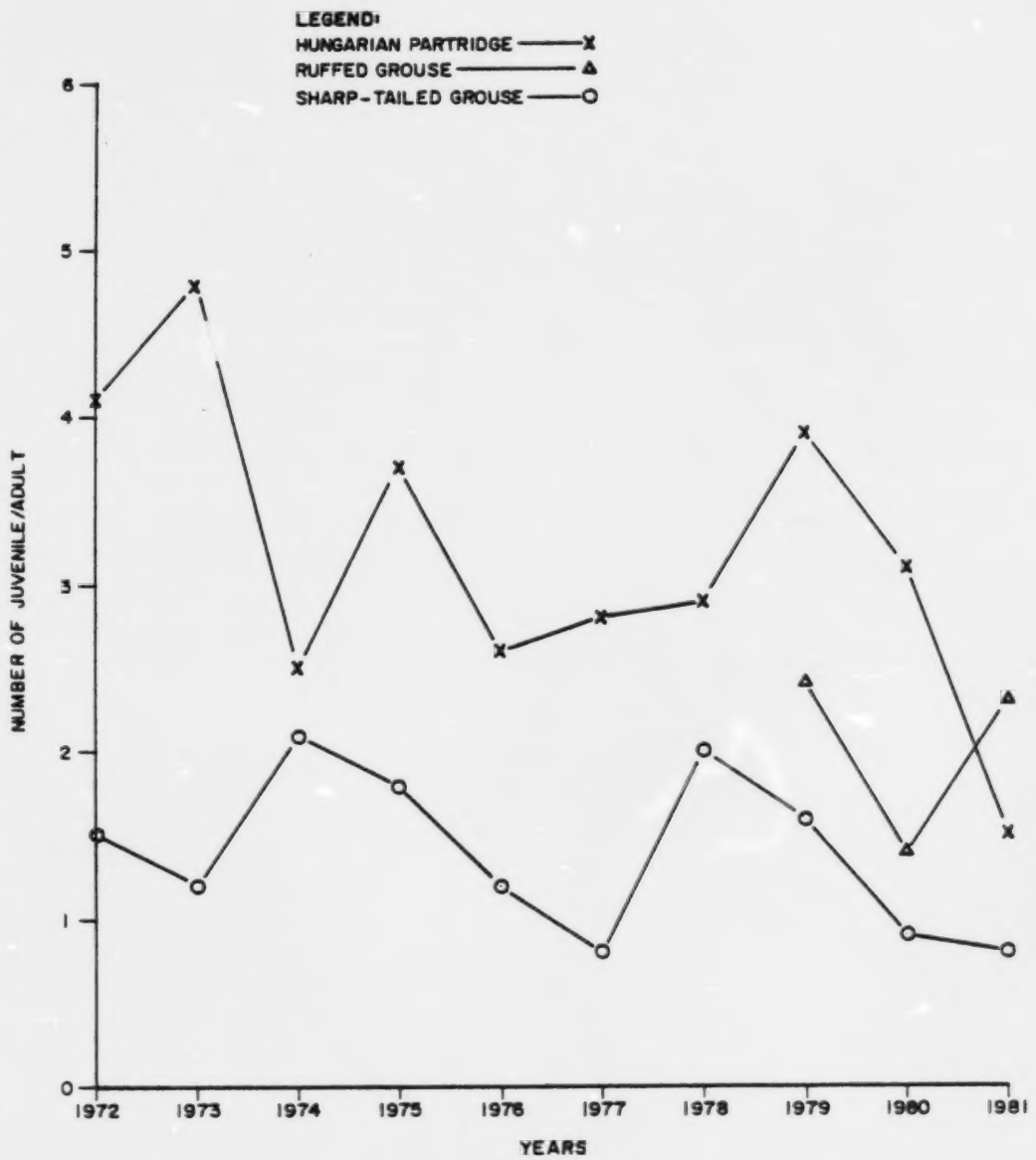


Figure 14: Saskatchewan Upland Game Bird Fall Age Ratios (Reproduction Index) 1972-1981 Based On Sample Of Hunter Bag

TABLE 16: Sharp-tailed Grouse Reproduction* in Saskatchewan. Historic vs 1981

Game Management Area	No. of Juveniles/Adult 1980	1981	75-80 Av.	% Change 1981 vs 80	% Change 1981 vs 75-80
Grassland	0.46	0.62	1.02	+ 35	- 39
Farmland	0.94	0.81	1.55	- 14	- 48
Parkland	1.66	0.98	1.52	- 41	- 36
Comm. Forest	1.51	0.62	2.44	- 59	- 75
PROVINCE	0.93	0.77	1.39 1.72**	- 18	- 45 - 55**

* Inferred from sample of wings from hunter killed birds.

** 1957-80 Average

This scenario was theorized in last year's Game Bird Status Report, based on poor reproduction in 1980 and observation of extensive cover depletion. The dramatic effects of "over-grazing" on sharptails are well known. However, this phenomenon may not wholly account for the reproductive failure observed. Severe drought is known to be capable of reducing egg hatchibility; this mechanism may have operated the last two years.

1982 POPULATIONS

Saskatchewan sharp-tailed grouse populations are at a very low ebb. The present situation is comparable to that existing after the severe 1973-74 winter, although rigid comparison is complicated by intervening survey area changes. The overall spring '82 density of 3.4 males/sq. mile of survey area is a 26 percent drop from 1980 (Table 17, Appendix 12). All Game Management Divisions and virtually every survey area registered major population declines. Smaller but significant declines were noted a year ago.

The sharptail population drop is attributed to the recent poor reproduction (Figure 14). The spring breeding population index is highly correlated with the reproduction index of the preceding year, both on a provincial basis ($r = .88$, $p \leq 0.02$) and in the Farmland ($r = .92$, $P \leq 0.01$). No correlation exists in the Grassland, possibly because of the large variation in survey locations and small wing sample sizes.

Hunting is <u>not</u> believed to have contributed to the population decline. There is no correlation between harvest and the ensuing breeding population index, on a broad scale. There is the suggestion of a <u>positive</u> correlation, rather than the negative correlation which would have to exist if hunting was being a population impact. In Zone 7, the Goodwater sharptail, spring population was unchanged at 17 males/sq. mile after the harvest peaked at slightly over 10 males/sq. mile of native habitat.

TABLE 17: Saskatchewan Sharp-tailed Grouse
Breeding Population Index
Spring 1982 vs 1981

Game Management Area	No. Blocks	Survey Area Area (Sq.Mi.)	Population Density (males/Sq.Mi.)	Population change from 1981			
				Areas up or unchanged	Area down	Areas not comparable	Density *
Grassland	6	165.5	3.04	0	3	3	- 26%
Farmland	16	288.9	3.54	1	10	5	- 24%
Parkland	8	155	3.68	2	3	3	- 24%
Comm. Forest	3	42.5	2.24	0	3	0	- 37%
PROVINCE	33	651.9	3.36	3	19	11	- 26%

* Based only on areas surveyed both years.

The severity of last winter relative to the 1980-81 winter may account for the greater population decline observed this spring. Reproduction was similar during the last two breeding seasons. Sharp-tailed grouse are much better adapted to survive our winter climate than the introduced Hungarian partridge and ring-neck pheasant, but severe weather can increase mortality. The combination of very shallow snow and severe cold characteristic of the northern Farmland and Parkland last winter may have been as detrimental as the deep snow in the south, because of the sharptail snow roosting behavior.

The outlook for 1982 sharp-tailed grouse reproduction is clouded. The heavy May snowfall in portions of Zones 2 to 6 and 8 almost certainly wiped out all nests, possibly including some females in late stages of incubation. Sharptails in this area will renest with associated smaller clutches, later hatching etc. Also, heavy May precipitation elsewhere in the province may not have been conducive to good reproduction, although June weather was more favorable. The heavy vegetative growth resulting from the moist conditions will have positive benefits.

SPECIAL PROBLEMS: (ZONE 5)

Numerous complaints have been received alleging a low sharptail population in the Great Sandhills (Zone 5). Zone 5 was opened to non-resident hunting of sharptails in 1981 following 8 years of closure. Concern has focused on the northern portion of these sandhills. Special attention has therefore been devoted to this area.

There has been a good spring survey of the northwestern portion of the Great Sandhills since 1973, with the exception of 1980. This reveals that a relatively high, stable population existed until at least spring 1980 (Table 18). The population has since dropped dramatically, as evidenced by the 3.9 males/sq. mile observed this spring.

This spring a new survey was conducted on the northern fringe of the Sandhills - the area reportedly affected by overhunting.

TABLE 18: Historical Sharp-tailed Grouse population in the Great Sandhills (Sceptre South Survey Area)

YEAR	LOCATION	AREA (mi^2)	POPULATION DENSITY* (males/sq. mile)
1973	Tp. 19 R. 24	36	13.3
1974		36	9.8
1975		36	8.8
1976		36	11.6
1977		30	12.8
1978		30	8.7
1979		20	8.9
1980		20	9.5
1981		20	-
1982		20	3.9

* Based on core 20 sq. miles surveyed every year.

TABLE 19: HISTORICAL SHARP-TAILED GROUSE HUNTING IN THE GREAT SANDHILLS REGION*

		Sharptail Harvest			
YEAR	TOTAL UPLAND HUNTER-DAYS	TOTAL BIRDS	BIRDS/ Sq.Mi. GROSS AREA	BIRDS/ Sq.Mi. NATIVE HABITAT	HARVEST BIRDS/ UPLAND HUNTER-DAY
1966	N/A	14,495	3.6		N/A
1967	N/A	13,088	3.2		N/A
1968	N/A	16,754	4.2		N/A
1969	N/A	18,601	4.6		N/A
1970	6,546	11,521	2.9		1.75
1971	7,387	10,960	2.7		1.49
**1972	1,408	5,309	1.3		3.70
1973	2,004	7,363	1.8		3.70
1974	1,784	2,742	.7		1.39
1975	1,543	4,465	1.5	3.5	2.89
1976	3,363	10,243	3.5	7.9	3.03
1977	3,146	6,669	2.3	5.2	2.12
1978	2,820	7,828	2.7	6.1	2.78
1979	1,263	3,917	1.4	3.0	3.13
1980	1,121	3,191	1.1	2.5	2.86
1981	2,229	3,778	1.3	2.9	1.69

* Game Mgmt. Zone 11 prior to 1975; G.M.Z. 5 since then

** Non-resident hunting banned commencing this year

A good population averaging 8.1 males/sq. mile was observed in the 19 square mile study area (Appendix 12). This proved to be the second highest population density reported this year in the province. However, dancing grounds situated on the extreme edge of the sandhills were significantly smaller than those in the interior, suggesting differential hunting pressure.

The history of sharp-tailed grouse hunting in the area is presented in Table 19. It's apparent that relatively high harvests (i.e., over 10,000) were taken prior to prohibition of non-resident hunting in 1972. Recently, harvests have declined to a very low level due to diminished hunting. Sharptail hunting and the associated harvest increased in 1981 in response to the removal of non-resident restrictions.

It's significant that sharptail hunting success in Zone 5 has typically been the highest in the province, indicating a high population. Recent harvest densities have also been much lower than in several Farmland zones.

The data strongly indicate there is no "special" problem with the sharptail population in Zone 5. The decline witnessed there is apparently part of the provincial decline. Poor reproduction, not hunting, is implicated as the cause. There is considerable potential for more hunting and harvest in Zone 5, although the current zone layout, combined with the heavy concentration of goose hunters along Highway No. 32, could result in excessive pressure on the northern fringe of the Sandhills.

The late May heavy snowfall in this region was not condusive to recovery of the sharptail population.

1982 HUNTING REGULATIONS

The seasons and bag limits established for sharp-tailed grouse hunting in 1982 are outlined in Appendix 8. The notable changes from recent years are the much later starting dates, especially in the southwestern corner of the province.

The much delayed season opening in Zones 2-6 and the west half of Zone 8 is primarily a reaction to the freak snowstorm which hit this area May 29. This snowstorm undoubtedly caused almost complete nest abandonment, thereby setting the hatch back about three weeks. The opening date for the hunting season is 3 1/2 weeks later than normal.

The delayed, shortened season will also reduce harvest, possibly by a third, thereby minimizing the possibility of current low populations being hurt by 1982 hunting pressure. Reproduction now will probably be lower than it would have been without the snowstorm, but it could be better than in recent years. Hopefully, there wasn't a major loss of adults in the storm.

The hunting season set for Zones 1, 7, east half of 8 and 9 to 22 reflects concern for the low ebb of sharptail populations in this area. The evidence points strongly to poor reproduction not hunting, as the cause of this situation. In other words, hunting is apparently still below the level at which it has an additive effect on mortality. Low sharptail populations would appear to enhance the risk of hunting impact, however, given the biology of this species.

It seems advisable to "cool off" sharptail harvest until the populations recover. Accommodating this objective with a delayed, shortened season is preferable to doing it via a bag limit restriction, in our view. Both options can be effective, used singly or in combination, as demonstrated in the mid - 1970's. The two week delay should produce at least a 20 percent reduction in harvest. Serious upland game bird hunters will still be encouraged by the bag limit to pursue their sport in October. They would be discouraged by an effective bag limit of 3:6. The typical game bird hunter who takes upland game birds incidental to waterfowl, would be little affected by a bag restriction, as would his harvest.

There is little general concern about Commercial Forest populations, as hunting pressure on them is relatively low. The delayed season might accommodate localized complaints received in the past. Hunting pressure on fringe populations may also be comparable to that in the Parkland and Farmland.

SUMMARY

Sharp-tailed grouse populations are low across the province because of two consecutive years of poor reproduction. Poor reproduction in 1981 reduced hunter success and consequently, the sharptail harvest. Poor duck hunting also depressed the harvest by causing less game bird hunting.

A delayed, shortened hunting season is the management reaction to the sharptail population status. This will minimize the possibility, albeit small, of hunting negatively affecting depressed populations. An unprecedented mid-October season opening will occur in the southwestern area hit by the late May snowstorm.

HUNGARIAN PARTRIDGE

1981 HUNTING AND REPRODUCTION

The status quo persisted with respect to 1981 Hungarian partridge hunting regulations (Appendix 2).

Twenty thousand (20,000) active Hungarian partridge hunters harvested 64,000 birds during fall 1981, virtually unchanged from 1980 (Tables 7 and 20, Figure 15). All measures of partridge hunting were slightly below the average of the last few years.

Two-thirds of the partridge harvest was produced by the Farmland (Table 21). Similar hunter success occurred in the Grassland but, typically, much more upland game bird hunting took place in the Farmland.

The central portion of the Farmland showed the highest harvest densities (Tables 22 and 23) (Figure 16). Zones 11, 12 and 13 ranked 1-2-3, respectively, with harvests ranging from 5-6 Hungarian partridge/square mile of native habitat (Table 22). This was the third consecutive year that Zone 11 ranked first in terms of harvest density. It produced only 5 percent of the provincial harvest though, because of its small size.

Zone 12 and especially Zone 13 continued to show a pronounced upward trend in hunting success, suggesting growing Hungarian populations. Zone 12 had the highest hunting success of any zone - 2 Hungarians/upland game bird hunter day. The success in Zone 13 was approximately half as great but through a combination of higher hunting pressure and larger size, it became the second largest contributor to the provincial harvest, next to Zone 7.

The partridge harvest peaked during the second week of October (Figure 13). The fall wing collection yielded a record low reproduction index of 1.5 juveniles/adult, (Figure 14) (Table 24) (Appendix 13). We are suspicious of it's validity, however. It is considerably below the previous record low and is not reinforced by hunter success data. Renewable Resources Technology students were involved in the aging, with checking by experienced personnel, but subsequent analysis of separate, small samples indicated aging may have been biased towards adults.

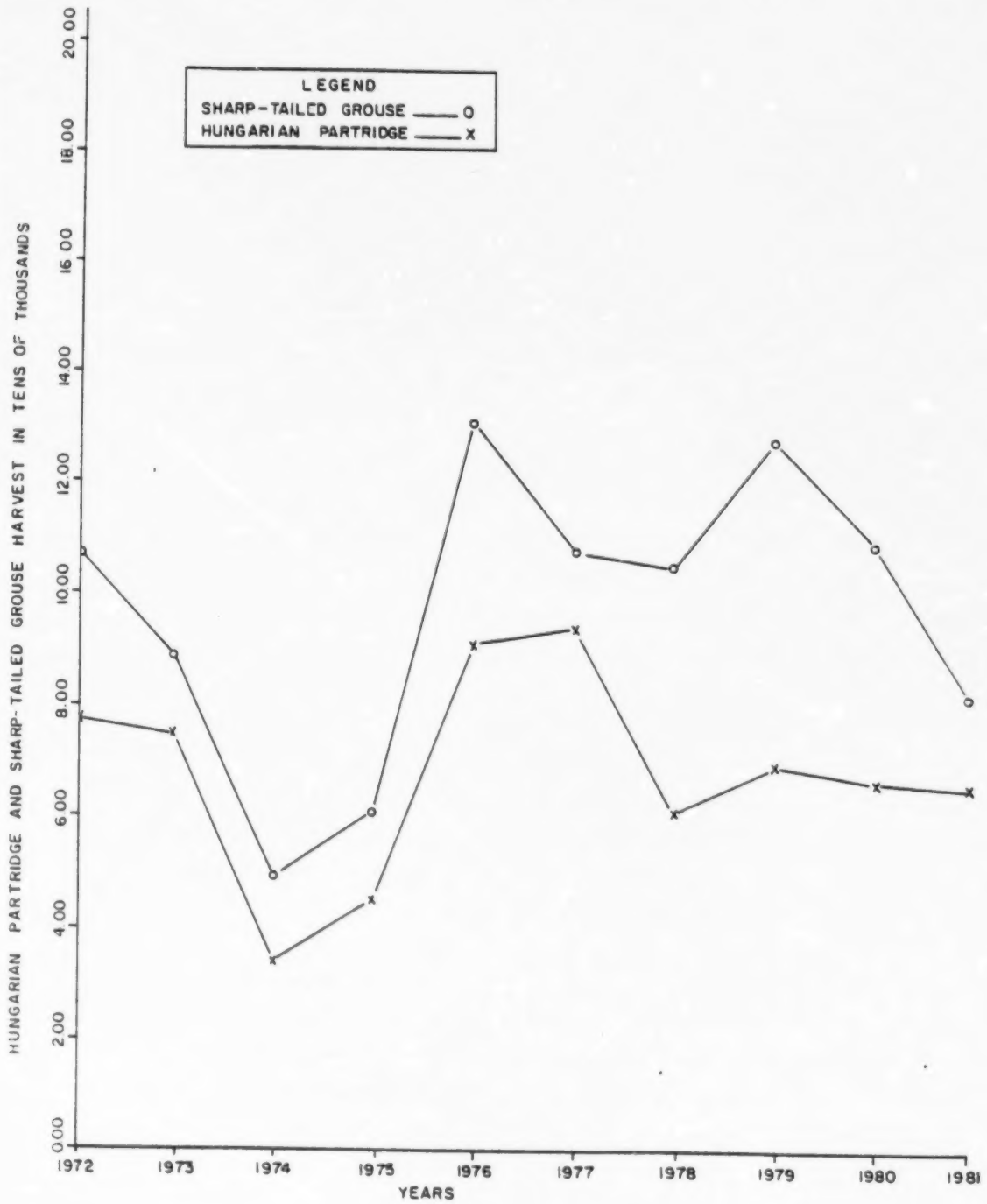


Figure 15 - Saskatchewan Sharp-Tailed Grouse And Hungarian Partridge Harvest, 1972-1981

TABLE 20. HUNGARIAN PARTRIDGE Hunting Data for Saskatchewan, 1971-1981 1/

	HUNTING LEVEL			HUNTING SUCCESS		
Year	Active Hungarian Partridge Hunters	Upland Bird Hunter Days	Hunters Days/ Active Hunter	Hungarian Partridge Harvest	Kill/ Active Hunter	Kill/ Upland Hunter Day
1971	28,418	79,973	3.1	113,670	4.0	1.30
1972	23,360	49,692	2.4	77,093	3.3	1.36
1973	20,741	50,827	2.5	74,668	3.6	1.42
1974 2/	15,276	33,722	2.5	33,608	2.2	.89
1975 2/	17,356	39,353	2.6	45,125	2.6	.95
1976 2/	22,835	73,458	3.2	90,897	4.0	1.24
1977 2/	25,535	78,289	3.1	93,616	3.4	1.20
1978	21,320	58,514	2.7	60,585	2.8	1.04
1979	21,041	59,801	2.8	69,127	3.3	1.16
1980	20,698	61,856	3.0	66,349	3.2	1.07
1981	19,617	57,149	2.9	64,349	3.3	1.13
71-80 Av.	21,658	58,548	2.7	72,474	3.3	1.24
% Change 81 from 80	- 5	- 8	- 3	- 3	+ 3	+ 6
% Change 81 vs Av.	- 9	- 2	+ 7	- 11	0	- 9

1/ Commercial Forest and Shield Divisions excluded because of insignificance to Hungarian Partridge hunting.

2/ Erroneous data was published for these years prior to 1979.

TABLE 21: HUNGARIAN PARTRIDGE 1981
Saskatchewan Hunting Data Compared by
Game Management Division

	Grassland	Farmland	Parkland	Commercial Forest	Province 1/
Harvest (% of Total)	11,814 (18.3%)	42,502 (66.1%)	10,032 (15.6%)	0	64,348 (100%)
Harvest Pressure (kill/sq.mi.)	.55	.90	.28	0	.62
Upland Bird Hunter Days (% of Total)	7,848 (13.7%)	29,883 (52.3%)	19,418 (34.0%)	0	57,149 (100%)
Hunting Pressure (hunter days /sq.mi.)	.37	.63	.55	0	.55
Hunter Success (kill/hunter day)	1.51	1.42	.52	0	1.13

1/ Commercial Forest and Shield Divisions excluded; Hungarian Partridge are essentially absent from these areas and no hunting is permitted there.

Table 22: Most Important Hungarian Partridge Harvest areas in Saskatchewan, 1980 and 1981

	1980				1981			
1/ Rank	Game Mgmt. Zone	Kill/ Sq.Mi.	Kill/ Sq.Mi. Native Habitat	% of Prov. Harvest	Game Mgmt. Zone	Kill/ Sq.Mi.	Kill/ Sq.Mi. Native Habitat	% of Prov. Harvest
1	11	2.44	8.5	6.6	11	1.55	5.9	4.7
2	7	1.52	6.2	15.9	12	1.26	5.5	11.1
3	8	1.04	5.2	13.2	13	1.23	5.23	13.3
4	9	1.16	4.9	10.7	7	1.29	5.21	13.9
5	12	0.94	4.1	8.0	9	.98	4.2	9.3
Total	Top 5 Zones	1.24	5.4	54.4	Top 5 Zones	1.22	5.1	52.3

1/ Ranked according to harvest density based on native habitat.

Table 23. Hungarian Partridge Harvest and Hunting Pressure by Game Management Zone, 1981.

GMZ	TOTAL KILL	% OF HARVEST	ACTIVE HUNTERS	BIRDS PER SQ.MILE	HUNTER DAYS PER BIRD*	TOTAL HUNTER DAYS*	SPECIES HUNTER DAYS
1	1702	2.64	576	0.645	0.75	1276	879
2	1083	1.68	462	0.229	0.54	585	397
3	1138	1.77	427	0.295	0.52	592	428
4	216	0.34	99	0.125	1.11	240	103
5	2724	4.23	936	0.943	0.82	2228	1021
6	4951	7.69	1669	0.897	0.59	2927	1877
7	8938	13.89	2336	1.288	0.58	5159	3130
8	5621	8.74	1997	0.668	0.54	3055	2151
9	5983	9.30	2241	0.981	0.69	4130	2398
10	1351	2.10	926	0.293	1.74	2353	900
11	3034	4.71	1264	1.546	0.89	2702	1501
12	7117	11.06	1901	1.256	0.49	3514	2362
13	8530	13.26	3258	1.229	0.90	7656	3881
14	1181	1.84	474	0.339	0.68	804	444
15	747	1.16	315	0.238	0.68	510	281
16	3862	6.03	1355	0.780	1.05	4057	1849
17	1107	1.72	706	0.420	1.51	1668	723
18	689	1.07	588	0.218	2.34	1611	639
19	1490	2.32	1147	0.276	2.41	3593	1168
20	317	0.49	327	0.094	4.66	1478	409
21	709	1.10	566	0.111	3.72	2634	504
22	1838	2.86	1191	0.198	2.38	4377	1317
23	0	0.0	0	0.0	0.0	2795	0
24	0	0.0	0	0.0	0.0	506	0
25	0	0.0	0	0.0	0.0	310	0
26	0	0.0	0	0.0	0.0	459	0
27	0	0.0	0	0.0	0.0	101	0
28	0	0.0	0	0.0	0.0	2010	0
29	0	0.0	0	0.0	0.0	135	0
30	0	0.0	0	0.0	0.0	2575	0
31	0	0.0	0	0.0	0.0	416	0
32	0	0.0	0	0.0	0.0	1045	0
33	0	0.0	0	0.0	0.0	812	0
34	0	0.0	0	0.0	0.0	156	0
35	0	0.0	0	0.0	0.0	126	0
36	0	0.0	0	0.0	0.0	152	0
37	0	0.0	0	0.0	0.0	240	0
	64348	100.0	24761	0.260	1.07	68987	28362

* HUNTER DAYS ARE BASED ON ALL UPLAND HUNTING. HALF DAY = HALF DAY. REFER TO APPENDIX A FOR SQUARE MILES PER GMZ.

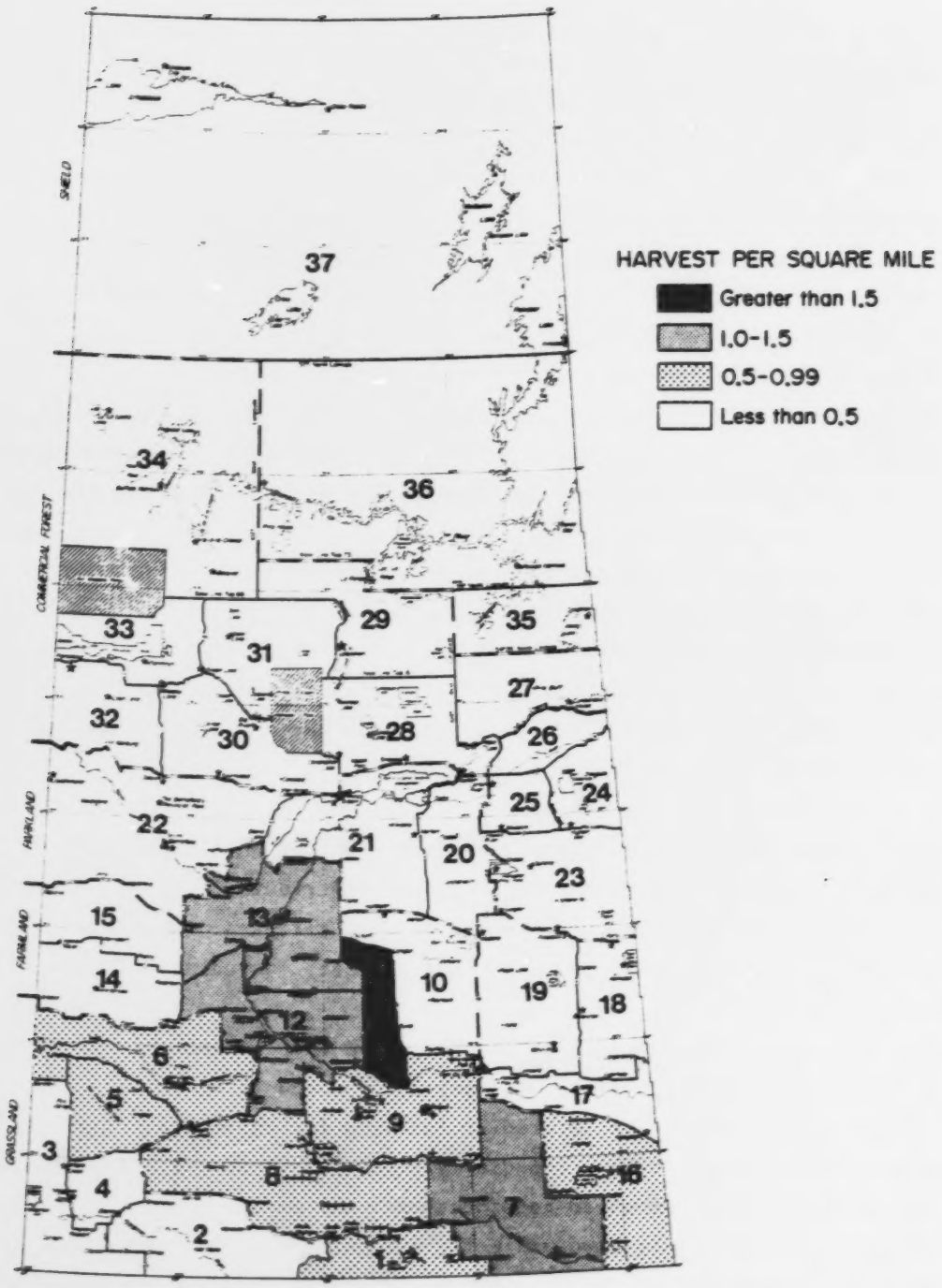


Figure 16 Saskatchewan Hungarian Partridge Harvest Density, 1981

1982 POPULATIONS

The provincial Hungarian partridge breeding population has declined 25 percent from last year, based on surveys of abandoned farmsteads (Table 25). A significant drop has occurred in the southern Farmland, whereas high, stable populations occurred in most of the Grassland.

Breeding populations in Game Management Zones 7 and 8 have been reduced by half since last year (Table 25). This was undoubtedly caused by the severe winter which occurred in south-central Saskatchewan. The Zone 7 population was strongly affected by freezing rain which occurred in mid December. The ensuing ice sheet persisted through the winter, causing very difficult feeding conditions. These conditions were aggravated by the deep snow accumulation, cold temperatures and blizzards which characterized much of the season. Partridge collected from late December to mid February showed progressive, serious decline in body condition. Peculiar food habits reinforced field observations that waste grain was commonly inaccessible. The wildlife feeding program launched in late January undoubtedly had a local, positive impact, but extensive portions of the range were unaffected. It was also begun too late to have the maximum benefit for Hungarian partridge.

The winter was apparently less severe in Zone 8 although a similar decline in the Hungarian partridge population has been observed. Poorer reproduction (Appendix 13) may have contributed to this. Moderate snow conditions prevailed until a mid January blizzard. Severe conditions existed for approximately two months after that, including additional blizzards.

Partridge populations may also have been reduced by the 1981-82 winter in Zone 1 and portions of Zones 2, 3, 9 and 16.

It is difficult to predict fall population levels. The widespread, heavy precipitation in May, especially the snowfall at the end of the month, was seemingly detrimental to reproduction. Any direct impacts on nesting may have been offset by favourable improvements in cover. Poor body condition stemming from the rigorous winter could decrease reproduction in the south-central portion of the province.

TABLE 24: Hungarian Partridge Reproduction* in Saskatchewan, Historic vs 1981

AREA	No. of Juveniles/Adult 1980	1981	57-80 Av.	% Change 1981 vs 1980	% Change 1981 vs 57-80
Grassland	2.2	1.4	-	- 36	-
Farmland	3.2	1.5	-	- 53	-
Parkland	-	-	-	-	-
PROVINCE	3.1	1.5	2.9	- 52	- 48

* Inferred from sample of wings from hunter killed birds.

TABLE 25: Saskatchewan Hungarian Partridge
Breeding Population Index
Spring 1982 vs 1981

Game Management Area	Abandoned Farmsteads Surveyed	% Occupied by Hun. Pairs	Pairs Observed/ Farmstead	% Population Change from 1981	
				Occupancy Rate	Density
3	10	10	.20	- 34	- 54
5	8	87	1.38	+ 1	+ 6
6	34	70	0.91	- 18	- 27
Grassland	52	(32) 62	(43) 0.82	0.0	- 8
7	26	38	0.38	- 40	- 57
8	41	46	0.56	- 39	- 51
9	22	36	0.45	+ 10	+ 73
10	11	27	0.27	- 23	- 76
12	30	70	1.00	+ 18	+ 32
13	11	54	0.64	+ 27	+ 137
14	11	27	0.27	- 26	- 59
15	15	27	0.27	-	-
Farmland	167	(74) 44	(90) 0.54	- 16	- 36
16	10	10	0.10	- 40	- 86
17	7	29	0.29	- 11	- 42
19	5	0	0	-	0
22	34	29	0.32	- 1	+ 6
Parkland	56	(13) 23	(14) 0.25	- 11	- 42
PROVINCE	275	(119) 43	(147) 0.53	- 8	- 25

1982 HUNTING REGULATIONS

The 1982 sport harvest of Hungarian partrdige will be regulated as outlined in Appendix 8. There has been only moderate changes to 1981 regulations, in spite of the population reduction which has occurred in south-central Saskatchewan.

The hunting utilization of Hungarian partridge is believed to be generally below the sustainable yield level. They are mostly harvested in a secondary or tertiary fashion in conjunction with other game bird hunting. This, combined with their behavior and reproductive potential, accounts for the relatively light hunting pressure they are receiving.

Lowering the southern bag limit regime by one partridge will satisfy a long term objective of eliminating confusing, minor variation in hunting regulations (i.e., in relation to bag limits for other upland species) unless they are definitely needed.

A delayed, shortened season is necessary for southwestern Saskatchewan. Breeding has almost certainly been set back three weeks and reduced in magnitude by the late May snowstorm which occurred there.

SUMMARY

Hungarian partridge hunting and harvest were stable in 1981. Partridge reproduction was apparently poor but the data are suspect. Significant winter mortality occurred in southern Zones 7 and 8, and is reflected in lower breeding populations. Populations elsewhere are generally high; the shallow snow in the northern Farmland and Parkland last winter was conducive to good partridge survival. Minor changes in hunting regulations have been made for 1982.

PHEASANT

1981 HUNTING

The 1981 hunting regulations are presented in Appendix 2.

All pertinent measures showed increased pheasant hunting in 1981 (Fig. 17, Table 26):

(a) Licence sales - 6,350 (up 5%)

(b) Active hunters - 4,825 (up 16%)

(c) Hunter days - 7,050 (up 20%)

Active hunters spent an average of].5 days hunting and experienced success averaging].8 pheasants bagged/hunter day.

The provincial pheasant harvest increased 6% between 1980 and 1981 (Tables 26 & 27). The impact of more hunting was dampened by an 11% drop in hunter success.

Zone 8 continued to be the primary pheasant hunting area, producing 44% of the harvest and 36% of the recreation (Tables 27 & 28). Zone 7 overtook Zone 2 in these respects, although the harvest pressure and hunting success were higher in Zone 2. The 2 week late season inaugurated last year in Zones 1-5 and 8 produced about 10% of the harvest and recreation (Fig. 18). The other new feature - Wed. opening of the early season - effectively reduced hunter crowding on opening day.

1982 POPULATIONS

The 1982 pheasant breeding population is 35% smaller than the spring 1981 population (Fig. 19, Table 29, Appendix 14). In the key areas, Zones 7 & 8, the populations were cut in half by severe winter weather. Blizzards were the main cause of mortality witnessed by Wildlife staff and reported by local people. The majority of surviving pheasants probably wintered in occupied farmsteads.

Depressed breeding populations will be translated into lower fall populations than experienced last year. Unpredictable reproductive perfromance will determine the exact size of the fall population. The main pheasant range escaped the heavy, late May snowfall. The effects of spring flooding and May rainfall are unknown. Summer weather will have had the major influence on reproduction.

1982 HUNTING REGULATIONS

The pheasant hunting regulations are essentially unchanged from 1981. The bag limit was not altered in the face of lower populations because cocks-only hunting cannot affect the long-term status of a population.

The late hunting season was retained and extended in length and area. It received significant use last year in spite of unusually wintery weather. The traditional Zone 6 late season was shortened to conform with the general late season.

SUMMARY

Pheasant hunting and harvest were at moderate levels last fall, up slightly from 1980. The severe 1981-82 winter in the primary pheasant range decimated populations. Pheasants are approximately half as numerous in this area this spring as they were one year ago. There is no danger of overhunting pheasants under a cocks-only restriction, regardless of the population level, so no hunting restrictions have been imposed for 1982.

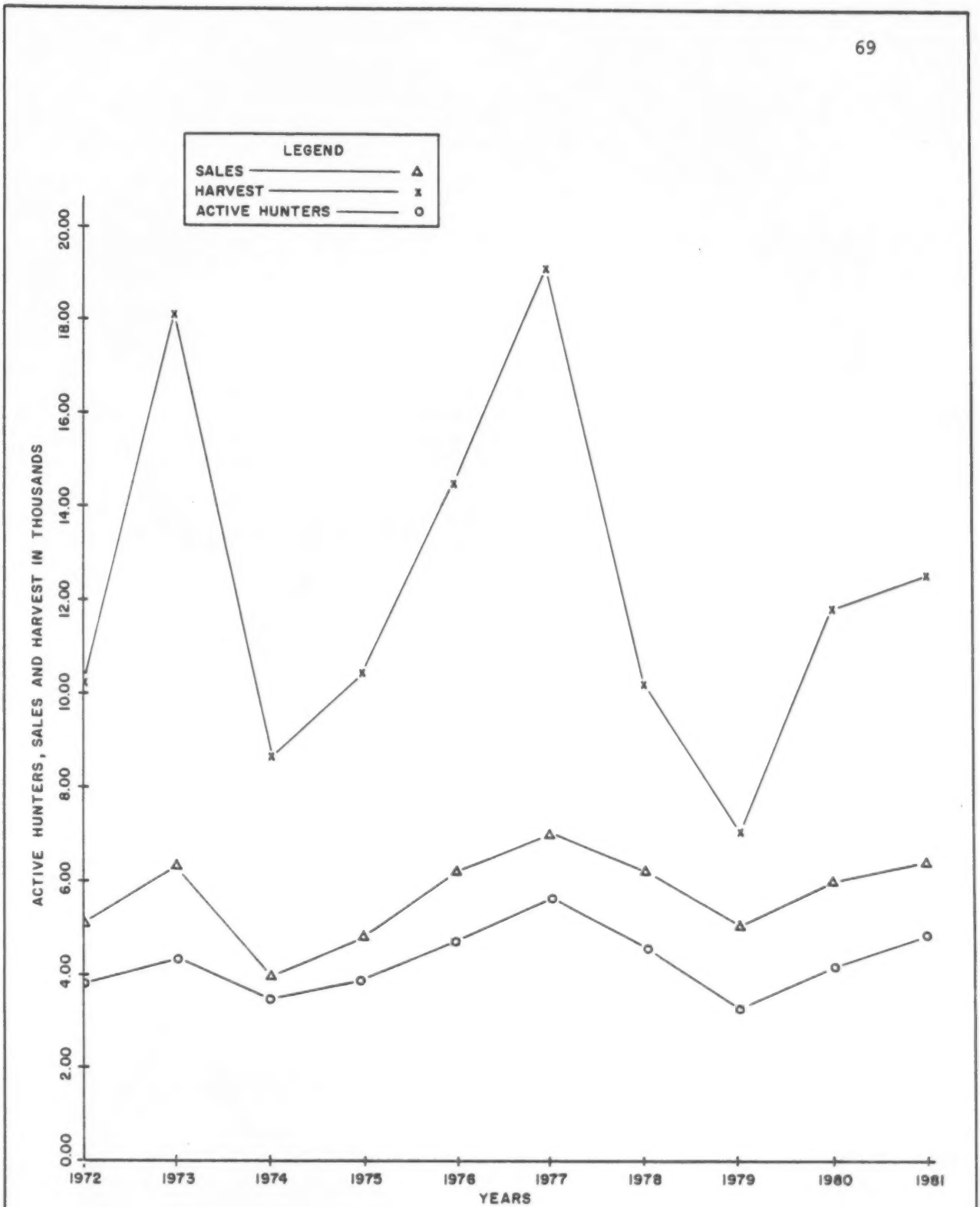


Figure 17 - Saskatchewan Pheasant Licence Sales, Hunting And Harvest, 1972 - 1981

TABLE 26. PHEASANT Hunting Data for Saskatchewan, 1976-1981

	HUNTING LEVEL				HUNTING SUCCESS	
Year	Active Pheasant Hunters	Pheasant Hunter Days	Hunter Days/ Active Hunter	Pheasant Harvest	Kill/ Active Hunter	Kill/ Hunter Day
1976	4,619	7,421	1.6	14,488	3.1	1.95
1977	5,726	9,718	1.7	19,097	3.3	2.05
1978	4,476	6,107	1.4	10,165	2.3	1.66
1979	3,441	4,390	1.3	7,060	2.1	1.61
1980	4,150	5,876	1.4	11,823	2.8	2.01
1981	4,825	7,052	1.5	12,536	2.6	1.78
76-80 Av.	4,482	6,702	1.5	12,527	2.8	1.87
% Change 81 from 80	+ 16	+ 20	+ 7	+ 6	- 7	- 11
% Change 81 vs Av.	+ 8	+ 5	0	0	- 7	- 5

Table 27. Saskatchewan Pheasant Harvest and Hunting Pressure by Game Management Zone - 1981.

GMZ	TOTAL HARVEST	% OF HARVEST	SQUARE MILES	BIRDS/ SQ.MILE	ACTIVE HUNTERS	BIRDS/ HUNTER	HUNTER DAYS *	HUNTER DAYS/ BIRD	DAYS/ HUNTER
1	217	1.73	2639	0.082	148	1.466	184.0	0.85	1.24
2	2180	17.39	4727	0.461	702	3.105	865.4	0.40	1.23
3	375	2.99	3854	0.097	198	1.894	218.8	0.58	1.11
4	118	0.94	1727	0.068	119	0.992	149.2	1.26	1.25
5	99	0.79	2890	0.034	99	1.000	84.5	0.85	0.85
6	759	6.06	5519	0.138	633	1.199	835.5	1.10	1.32
7	2584	20.61	6937	0.372	1009	2.561	1278.2	0.49	1.27
8	5523	44.06	8413	0.656	1860	2.969	2551.4	0.46	1.37
9	345	2.75	6098	0.057	336	1.027	308.4	0.89	0.92
10	49	0.39	4607	0.011	59	0.831	39.8	0.81	0.67
11	10	0.08	1963	0.005	30	0.333	24.9	2.49	0.83
12	10	0.08	5668	0.002	69	0.145	74.6	7.46	1.08
13	10	0.08	6942	0.001	69	0.145	34.8	3.48	0.50
14	0	0.0	3488	0.0	20	0.0	24.9	0.0	1.24
15	0	0.0	3145	0.0	0	0.0	0.0	0.0	0.0
16	39	0.31	4979	0.008	139	0.281	149.2	3.83	1.07
17	217	1.73	2634	0.082	218	0.995	228.8	1.05	1.05

* HALF DAY = HALF DAY.
FOR SAMPLE SIZES SEE TABLE 62

Table 28. Most important pheasant hunting areas in Saskatchewan, 1981.

	Zone 8	Zone 2	Zone 7	Total	Province
Harvest (% of Total)	5,523 (44%)	2,180 (17%)	2,584 (21%)	10,287 (82%)	12,536 (100%)
Harvest Pressure (kill/sq.mi.)	.66	.46	.37	.51	.16
Pheasant Hunter Days (% of Total)	2,551 (36%)	856 (12%)	1,278 (18%)	4,694 (67%)	7,052 (100%)
Hunting Pressure (hunter days /sq.mi.)	.30	.18	.18	.23	.09
Hunter Success (kill/hunter day)	2.17	2.50	2.04	2.19	1.78

1/ Province defined as Zones 1-17, the only ones in which a pheasant hunting season is held.

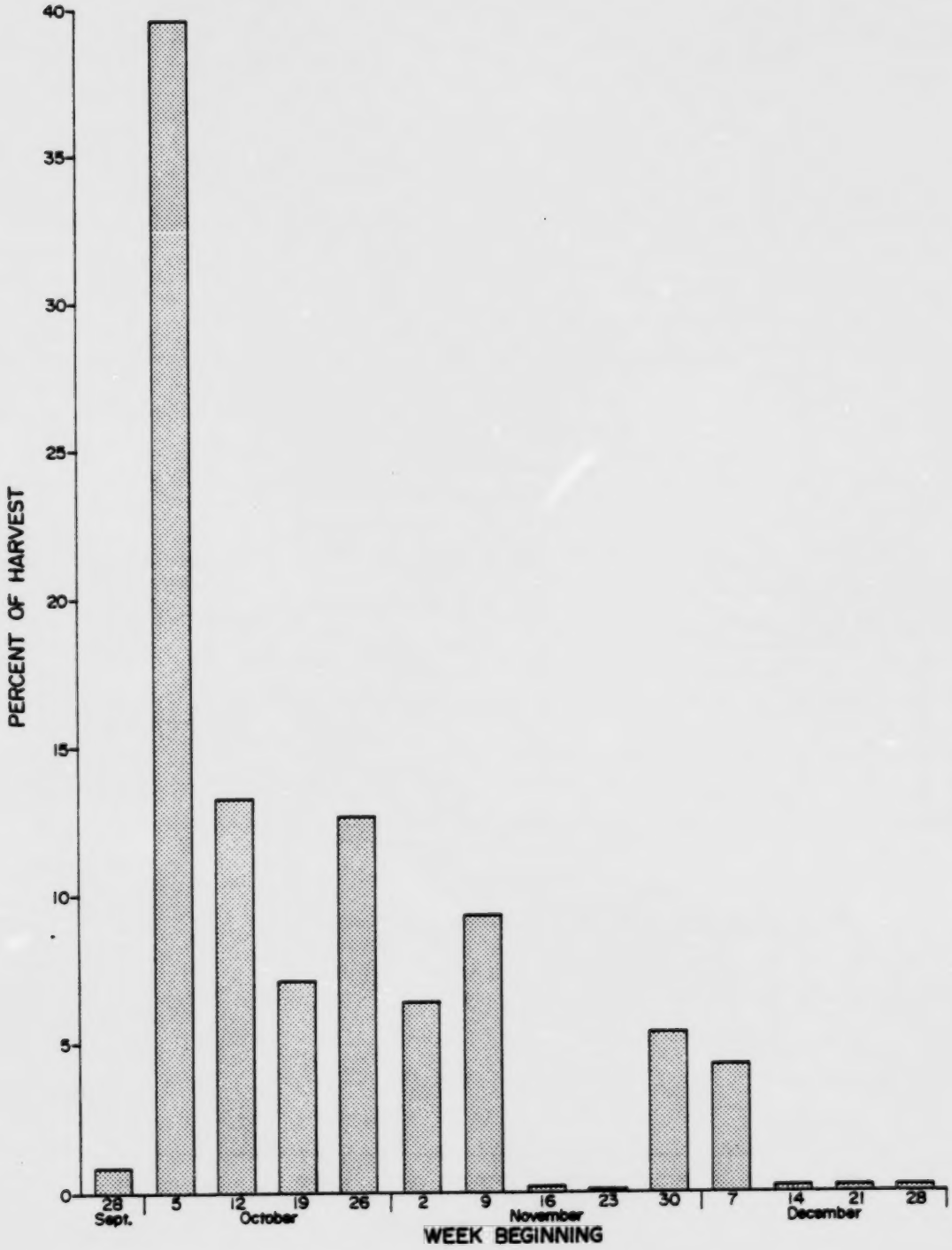


Figure 18. Saskatchewan 1981 Pheasant Harvest by Weekly Intervals

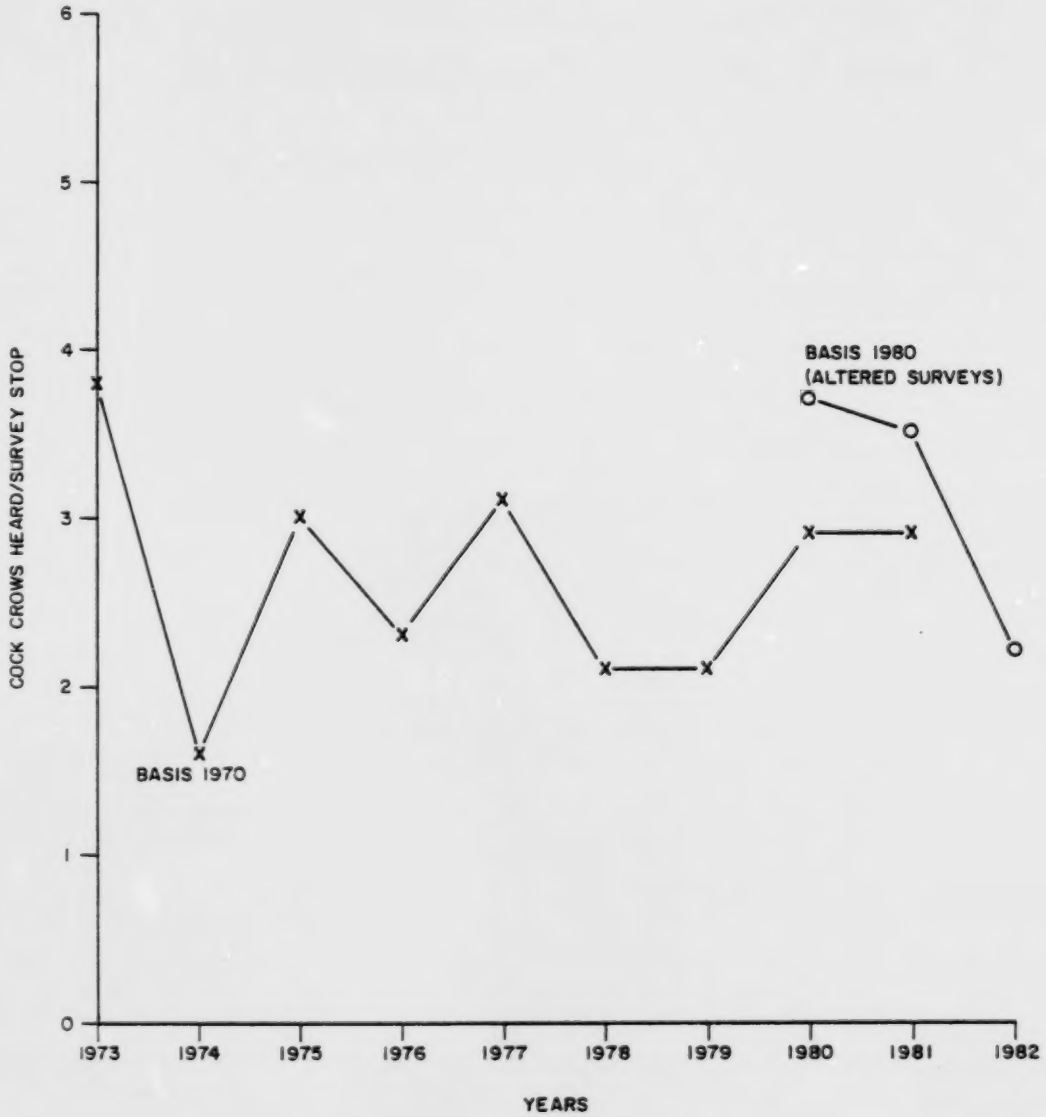


Figure 19. Saskatchewan Pheasant Spring Breeding Population Index 1973 - 1982

TABLE 29 : Saskatchewan Pheasant
Breeding Population Index, Spring 1982

Game Management Area	No. Survey Areas	Crows Heard/ Survey Stop	Population Change from 1981: Areas Up or Unchanged	Areas Down	Areas Not Comparable	Density* 1
G.M.Z 1	1	0.6	0	1	0	- 76
G.M.Z. 2	2	4.9	0	2	0	- 37
G.M.Z. 3	1	4.0	1	0	0	+ 43
G.M.Z. 6	3	2.1	0	3	0	- 23
Grassland	7	3.0	1	6	0	- 44
G.M.Z. 7	2	2.6	0	2	0	- 57
G.M.Z. 8	5	2.0	0	5	0	- 49
G.M.Z. 9	1	3.2	0	1	0	- 32
G.M.Z. 12	2	0.4	0	2	0	- 22
Farmland	10	1.6	0	10	0	- 47
Parkland (G.M.Z. 17)	2	2.8	1	0	1	+ 70
PROVINCE	19	2.2	2	16	1	- 35

* % change, based only on unaltered areas surveyed both years.

RUFFED GROUSE

1981 HUNTING AND REPRODUCTION

Hunting and harvest of this popular game bird nosedived in 1981 due to very low populations; hunting regulations were static (Appendix 2). The harvest decreased 60% from 1980, to 37,000 (Fig. 20, Tables 7 & 30). This was largely a product of sharply reduced (-58%) hunter success, but the amount of hunting also declined.

All portions of the ruffed grouse range were affected. The Parkland remained the major ruffed grouse hunting area, producing 52% of the provincial harvest (Table 31 & 32) (Fig. 21). Hunting success was similar to that experienced in the Commercial Forest, although hunting and harvest pressure were almost double. The southeastern Parkland was particularly important, producing the top three zones in terms of harvest density (Table 33).

The chronology of the ruffed grouse harvest is outlined in Figure 13.

Ruffed grouse reproduction was good (Fig. 14, Table 34, Appendix 15), but it was overshadowed by the apparent cyclic decline in the adult population.

1982 POPULATIONS

Ruffed grouse populations were very low virtually everywhere in spring 1982 (Table 35, Appendix 16). They declined 25% overall from last year and have dropped approximately 60% in three years. The highest population was recorded in Moose Mountain Park.

Ruffed grouse must now be near the bottom of their infamous population cycle, with nowhere to go but up.

1982 HUNTING REGULATIONS

The regulations status quo has been maintained (Appendix 8), except the traditional Moose Mountain Park hunting season has been

modified to accommodate other wildlife management considerations. The Moose Mountain season will run immediately prior to and concurrent with the white-tailed deer season, but will avoid the special elk season. Moose Mountain Park is not a popular whitetail hunting area, therefore no conflicts are anticipated.

New hunting seasons have been established in Duck Mountain and Greenwater Provincial Parks which have the capability to provide ruffed grouse - hunting recreation. These seasons should not conflict with Big Game or Park administration objectives.

SUMMARY

Widespread, low populations last fall produced a major reduction in ruffed grouse hunting and harvest. The breeding population index is lower in spring 1982 than it has been since surveys commenced in 1979. Ruffed grouse are apparentiy in the trough of their characteristic population cycle. There may be no evidence of recovery for a couple of years. This is an entirely natural phenomenon and no hunting regulation changes are required. New hunting seasons have been established in Duck Mountain and Greenwater Provincial Parks, and the Moose Mountain Park hunting season has been altered.

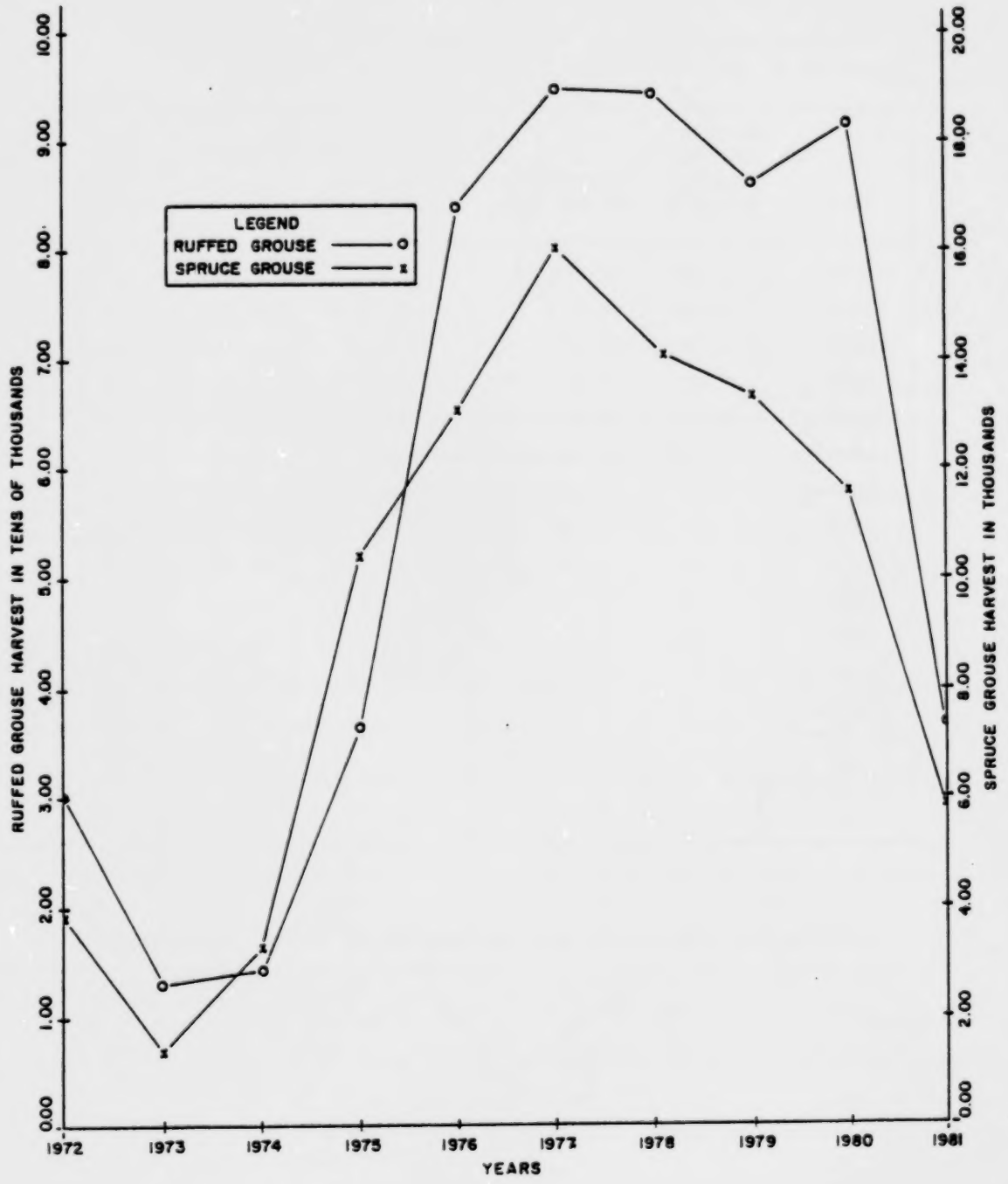


Figure 20 - Saskatchewan Ruffed And Spruce Grouse Harvest, 1972 - 1981

TABLE 30: RUFFED GROUSE Hunting Data for Saskatchewan, 1971-1981

	HUNTING LEVEL			HUNTING SUCCESS		
Year	Active Ruffed Grouse Hunters	Upland Bird Hunter Days	Hunter Days/ Active Hunter	Ruffed Grouse Harvest	Kill/ Active Hunter	Kill/ Upland Hunter Day
1971	11,138	87,906	7.9	37,869	3.4	0.4
1972	11,057	56,534	5.1	29,853	2.7	0.5
1973	9,102	53,275	5.9	12,743	1.4	0.2
1974 1/	7,477	37,801	5.1	14,205	1.9	0.4
1975 1/	12,091	48,161	4.0	36,274	3.0	0.8
1976 1/	14,782	86,525	5.9	83,805	5.7	1.0
1977 1/	17,757	93,496	5.3	94,353	5.3	1.0
1978	17,042	72,380	4.2	94,203	5.5	1.3
1979	17,545	72,096	4.1	86,309	4.9	1.2
1980	18,363	75,578	4.1	91,514	5.0	1.2
1981	14,466	68,989	4.8	36,711	2.5	0.5
71-80 Av.	13,636	66,114	4.8	59,096	4.3	0.9
% Change 81 From 80	- 21	- 9	+ 17	- 60	- 50	- 58
% Change 81 vs Av.	+ 6	+ 4	0	- 38	- 42	- 44

1/ Data for these years was erroneous prior to 1979 correction.

TABLE 31: RUFFED GROUSE 1981 Saskatchewan Hunting Data, Compared by Game Management Division

	Grassland	Farmland	Parkland	Commercial Forest	Province
Harvest (% of Total)	315 (0.9%)	5,426 (14.8%)	19,059 (51.9%)	11,653 (31.7%)	36,453 (99.3%)
Harvest Pressure (kill/sq.mi.)	.01	.11	.54	.29	.25
Upland Bird Hunter Days (% of Total)	7,848 (11.4%)	29,883 (43.3%)	19,418 (28.1%)	11,164 (16.2%)	68,313 (99%)
Hunting Pressure (hunter days /sq.mi.)	.37	.63	.55	.28	.48
Hunter Success (kill/hunter day)	.04	.18	.98	1.04	.53

1/ Zone 34 excluded because of insignificance to ruffed grouse hunting.

2/ Shield Division and Zone 34 excluded because of insignificance to ruffed grouse hunting.

Table 32. Ruffed Grouse Harvest and Hunting Pressure by Game Management Zone, 1981.

GMZ	TOTAL KILL	% OF HARVEST	ACTIVE HUNTERS	BIRDS PER SQ. MILE	HUNTER DAYS PER BIRD*	TOTAL HUNTER DAYS*	SPECIES HUNTER DAY
1	111	0.30	79	0.042	11.50	1276	154
2	0	0.0	17	0.0	0.0	585	13
3	34	0.09	42	0.009	17.41	592	39
4	0	0.0	8	0.0	0.0	240	21
5	17	0.05	79	0.006	131.06	2228	67
6	153	0.42	202	0.028	19.13	2927	193
7	403	1.10	391	0.058	12.80	5159	354
8	247	0.67	203	0.029	12.37	3055	201
9	792	2.16	573	0.130	5.21	4130	532
10	1221	3.33	626	0.265	1.93	2353	793
11	376	1.02	307	0.192	7.19	2702	316
12	123	0.34	246	0.022	28.57	3514	238
13	2000	5.45	1395	0.288	3.83	7656	1610
14	179	0.49	84	0.051	4.49	804	116
15	85	0.23	67	0.027	6.00	510	39
16	4479	12.20	1213	0.900	0.91	4057	1896
17	1848	5.03	752	0.702	0.90	1668	959
18	1450	3.95	723	0.458	1.11	1611	929
19	4103	11.18	1534	0.760	0.88	3593	2003
20	1231	3.35	731	0.366	1.20	1478	827
21	2492	6.79	1258	0.390	1.06	2634	1394
22	3456	9.41	1713	0.373	1.27	4377	2141
23	3266	8.90	1266	0.640	0.86	2795	1875
24	340	0.93	239	0.170	1.49	506	379
25	400	1.09	220	0.272	0.77	310	189
26	380	1.04	341	0.224	1.21	459	291
27	85	0.23	84	0.022	1.19	101	60
28	1954	5.32	974	0.408	1.03	2010	1161
29	94	0.26	59	0.018	1.44	135	69
30	2317	6.31	1227	0.499	1.11	2575	1629
31	555	1.51	279	0.132	0.75	416	273
32	1084	2.95	537	0.306	0.96	1045	643
33	1178	3.21	311	0.349	0.69	812	587
34	187	0.51	67	0.012	0.83	156	112
35	26	0.07	59	0.008	4.85	126	56
36	43	0.12	110	0.002	3.53	152	82
37	0	0.0	17	0.0	0.0	240	60
	36709	100.00	18033	0.148	1.88	68987	22301

* HUNTER DAYS ARE BASED ON ALL UPLAND HUNTING. HALF DAY = HALF DAY.
REFER TO APPENDIX A FOR SQUARE MILES PER GMZ.

Table 33: Most Important 1/ Ruffed Grouse Harvest areas in Saskatchewan, 1980 and 1981

	1980				1981			
1/ Rank	Game Mgmt. Zone	Kill/ Sq.Mi.	Kill/ Sq.Mi. Native Habitat	% of Prov. Harvest	Game Mgmt. Zone	Kill/ Sq.Mi.	Kill/ Sq.Mi. Native Habitat	% of Prov. Harvest
1	19	1.81	7.9	10.7	16	.90	3.0	12.2
2	17	1.71	7.7	4.9	19	.76	3.3	11.2
3	23	1.47	N.A.	8.2	17	.70	2.4	5.0
4	18	1.41	5.4	4.9	23	.64	N.A.	8.9
5	21	1.39	N.A.	9.7	30	.50	N.A.	6.3
Total	Top 5 Zones	1.55	N.A.	38.4	Top 5 Zones	.70		43.6

1/ Ranked according to harvest density based on gross area; native habitat areas not yet available for all Game Management Zones.

TABLE 34: Ruffed Grouse Reproduction* in Saskatchewan, 1981 vs 1980

Game Management Area	No. Juveniles/Adult 1980	1981	% Change 1981 vs 1980
Farmland	1.03	1.19	+ 15.5
Parkland	1.39	3.12	+124.5
Comm. Forest	1.84	2.77	+ 50.5
PROVINCE	1.41	2.30	+ 63.1

* Inferred from sample of wings from hunter killed birds.

Table 35 : Saskatchewan Ruffed Grouse
Breeding Population Index, Spring 1982 vs 1981

			Population change from 1981			
Game Management Area	No. Survey Areas (82)	Drums heard/ Survey stop	Areas up or unchanged	Areas down	Areas not Comparable	* Density
Grassland (G.M.Z. 3 Cypress Hills)	1	1.18	0	1	0	- 18.6%
Parkland (east) (G.M.Z.'s 16-19)	5	1.85 * 2.34	3	1	1	+ 22.3%
Parkland (central) (G.M.Z.'s 21+21)	2	0.10	0	2	0	- 76.9%
Parkland (west) (G.M.Z. 22)	1	* 0.25	0	1	0	- 78.3%
Comm. Forest (east) (G.M.Z.'s 23-27)	8	0.30 * 0.29	1	6	1	- 62.4%
Comm. Forest (central) (G.M.Z.'s 28+29)	1	1.00	1	0	0	+112.8%
Comm. Forest (west) (G.M.Z.'s 30-33)	4	0.24	0	4	0	- 66.1%
PROVINCE	23	0.69 * 0.72	5	15	2	- 25.0%

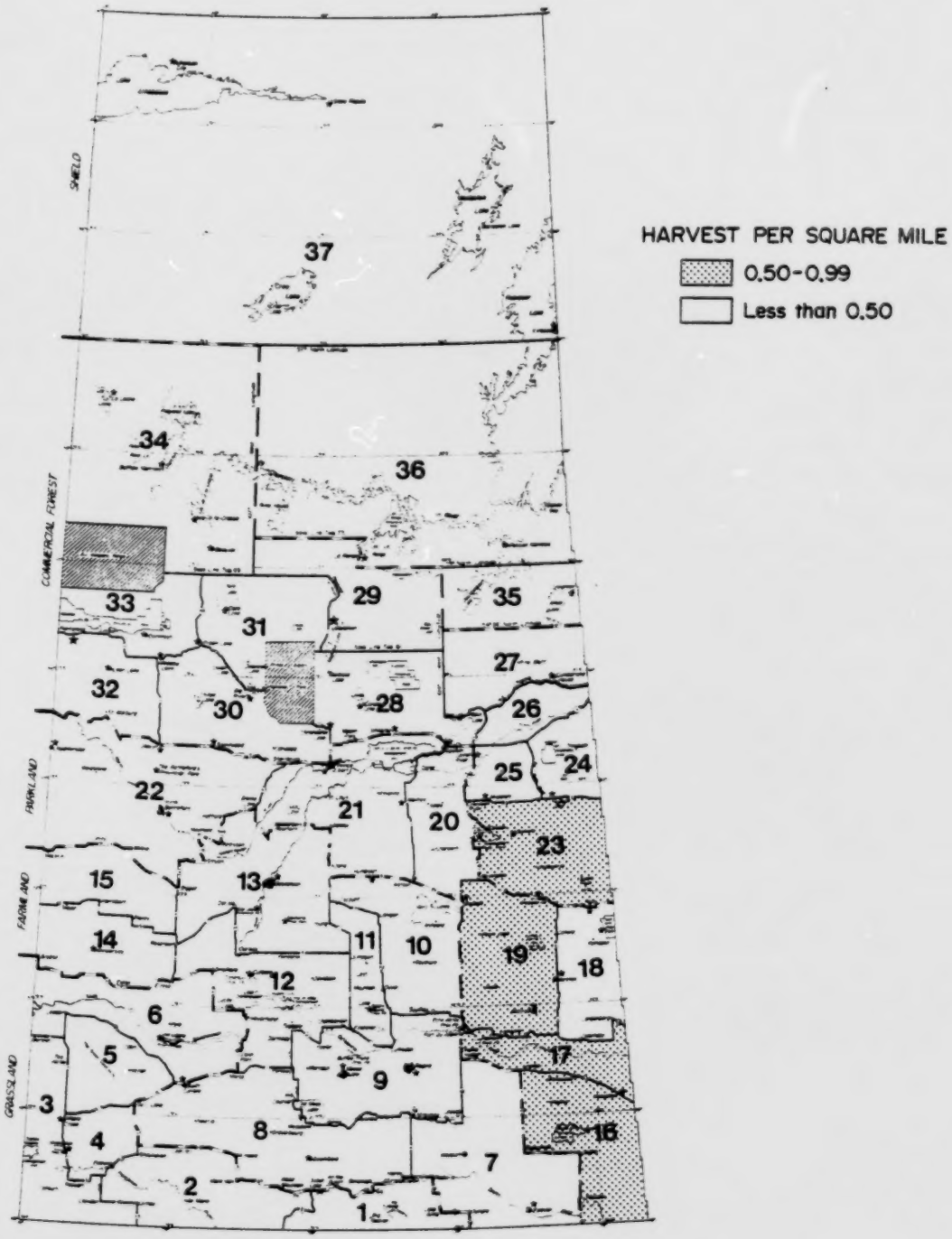


Figure 21 Saskatchewan Ruffed Grouse Harvest Density, 1981

Table 36. Spruce Grouse Harvest and Hunting Pressure by Game Management Zone, 1981

GMZ	TOTAL KILL	% OF HARVEST	ACTIVE HUNTERS	BIRDS PER SQ.MILE	HUNTER DAYS PER BIRD*	TOTAL HUNTER DAYS*	SPECIES HUNTER DAYS
1	0	0.0	0	0.0	0.0	1276	0
2	0	0.0	0	0.0	0.0	585	0
3	0	0.0	0	0.0	0.0	592	0
4	0	0.0	0	0.0	0.0	240	0
5	0	0.0	0	0.0	0.0	2228	0
6	0	0.0	0	0.0	0.0	2927	0
7	0	0.0	0	0.0	0.0	5159	0
8	0	0.0	0	0.0	0.0	3055	0
9	0	0.0	0	0.0	0.0	4130	0
10	0	0.0	0	0.0	0.0	2353	0
11	0	0.0	0	0.0	0.0	2702	0
12	0	0.0	0	0.0	0.0	3514	0
13	0	0.0	0	0.0	0.0	7656	0
14	0	0.0	0	0.0	0.0	804	0
15	0	0.0	0	0.0	0.0	510	0
16	0	0.0	0	0.0	0.0	4057	0
17	0	0.0	0	0.0	0.0	1668	0
18	60	1.02	68	0.019	26.85	1611	92
19	0	0.0	0	0.0	0.0	3593	0
20	60	1.02	110	0.018	24.63	1478	130
21	657	11.18	390	0.103	4.01	2634	416
22	0	0.0	0	0.0	0.0	4377	0
23	449	7.64	399	0.088	6.22	2795	556
24	104	1.77	121	0.052	4.87	506	157
25	129	2.20	94	0.088	2.40	310	76
26	52	0.88	127	0.031	8.83	459	88
27	112	1.91	68	0.029	0.90	101	59
28	1763	30.00	696	0.369	1.14	2010	945
29	17	0.29	68	0.003	7.94	135	76
30	666	11.33	467	0.143	3.87	2575	463
31	156	2.65	195	0.037	2.67	416	181
32	173	2.94	127	0.049	6.04	1045	160
33	752	12.80	179	0.223	1.08	812	320
34	294	5.00	85	0.019	0.53	156	88
35	52	0.88	68	0.015	2.42	126	67
36	138	2.35	144	0.005	1.10	152	118
37	242	4.12	59	0.004	0.99	240	193
	5876	100.00	3465	0.024	11.74	68987	4185

* HUNTER DAYS ARE BASED ON ALL UPLAND HUNTING. HALF DAY = HALF DAY.

OTHER SPECIES

SPRUCE GROUSE

Summary

The spruce grouse harvest went from 11,600 in 1980 to 5,900 last fall, in accordance with the decline in ruffed grouse hunting (Fig. 20 (Tables 7 & 36). Spruce grouse are taken on an incidental basis and hunting pressure on them is believed to be light. The 1982 hunting regulations (Appendix 8) are linked with the 1982 ruffed grouse hunting regulations, as usual, and are similar to those in force last year. The hunting season has been cancelled in Zone 18 because it is essentially devoid of spruce grouse.

PTARMIGAN

Summary

No hunting or population data are available for this migratory, northern grouse. Its Saskatchewan range is largely inaccessible. The traditional liberal hunting regulations have been continued for 1982-83 (Appendix 8).

BIG GAME

1981 HUNTING REGULATIONS

Hunting season dates, bag limits and licence quotas per big game species are presented in Appendix 17.

Moose, mule deer, elk and antelope licences were made available through a computerized draw.

As in previous years resident hunters could purchase moose and elk licences if they were not successful in the draw.

Two hundred and ninety guided moose licences were sold to non-Saskatchewan residents.

Hunters were allowed to purchase two white-tailed licences in the Commercial Forest zones. High deer populations in the forest area permitted the opportunity for hunters to take two deer.

DATA COLLECTION TECHNIQUES

Licence Sales

Department of Tourism and Renewable Resources, Revenue Section, tabulated and mailed computerized draw licences directly to hunters.

White-tailed deer, woodland caribou and black bear licences are purchased through approximately 1,200 commercial vendors and D.T.R.R. Regional offices distributed throughout the province.

Vendors return sold and unsold licences to D.T.R.R. Revenue who are then able to determine provincial licence sale figures for each big game species.

Hunter Questionnaire Survey

In 1981, 23,000 resident hunters and 993 non-resident hunters were mailed big game questionnaires on October 15, 1981.

These hunters were randomly selected from among the 1980 big game licence holders and computerized draw licence holders.

Second mailing of approximately 20,000 questionnaires were mailed out on January 4, 1982 to hunters that did not reply to the first questionnaire.

Cut off date for return of questionnaires was January 31, 1982.

Questionnaires were then edited, keypunched and entered into a computer for tabulation of data.

Data print-out was available for analysis by March 1, 1982.

Checking Stations

Two D.T.R.R. checking stations along with ten private co-operator collection points were used to obtain age and sex information for moose.

D.T.R.R. Wildlife staff operated two antelope checking stations during the first two days of the season.

White-tailed deer and mule deer sex and age information was obtained at road blocks established principally for enforcement purposes and Department personnel field checks.

Population Surveys

Aerial surveys are conducted during the winter months to determine population levels, herd segregation and productivity for moose, white-tailed deer, mule deer and elk populations.

Antelope are surveyed in July to assess population levels and herd productivity.

WHITE-TAILED DEER

REVIEW OF 1981 HUNTING SEASON

Licence Sales

	1979	1980	1981
Resident	62,181	64,339	63,543
Canadian Resident	771	974	1,316
Non-Resident	54	80	124
2nd Licence Sales			
Resident			6,757
Canadian Resident			49
Non-Resident			21
TOTAL	63,006	65,393	71,810
Resident Archery		1,004	1,376

Harvest

Provincial deer harvest was 41,149* animals compared to 42,755 animals in 1980 (Table 37). As had been reported in last year's hunting season booklet, these harvest levels are very similar to mid-1960's and early 1970's harvest levels.

Despite management objective to encourage higher harvest of deer in the Commercial Forest by allowing harvest of two deer and lengthening hunting season with the establishment of an October season, harvest in the Forest zones dropped to 21 percent from 25 percent of the total harvest reported in 1980 (Table 41).

Estimated archery harvest was 116 animals.

Harvest decline was noted in the Parkland zones while the Grassland and Farmland zones indicated slight harvest increases.

The direct cause of harvest decline in the Forest and Parkland zones was a corresponding decrease in the hunting success, as the amount

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* Harvest estimates projected from licence sales figures obtained in February.

of deer hunting recreation days remained relatively unchanged.

Poor hunting weather conditions was the main contributing factor for the reduced hunting success and associated harvest in the forest zones.

Weather conditions played a role in lowering hunter success and harvest in the Parkland zones, but it was not believed to be the main contributing factor. This will be expanded upon in the population section.

The Grassland and Farmland zones increased in relative importance as a deer hunting area, producing 42% of the provincial harvest vs 33% in 1980. Since 1975 these ecological divisions have contributed from 32 percent to 47 percent of the provincial harvest.

The top game management zone with respect to deer harvest was Zone 16 (Table 40). It was marked by a harvest density of 3.78 deer/square mile and represented 13.8 percent of the provincial harvest.

The other relatively high density harvest areas were Zones 7 (2.28 deer/sq. mile) and 17 (2.11 deer/sq.mile).

The Parklands proportion of the provincial harvest has declined since the late 1960's (Table 42). Current harvest levels in Zones 16 and 17 are just below the mid to late 1960's, Zones 20, 21 and 22 totals are about equal to those of the 1960's and Zones 18 and 19 totals are about half those of the 1960's (Table 43).

Hunter Participation

Hunters spent 190,122 days afield or approximately 21,200 more days afield than 1980 (Table 43).

Hunter days in Parkland zones (Table 45) remained relatively unchanged while hunting pressure increased in the Grassland and Farmland zones.

Hunting pressure based on first deer tag licences in Forest zones moderated from 1980, but when hunter days from second deer tag licences were added to first deer tag licence hunter days, hunting pressure was higher than the 1980 figure (Table 49).

Hunter Efficiency and Demand

Figure 22 depicts harvest, recreation days and hunter days/ animal harvested over the 1970 to 1981 period.

During the last few years, the graph shows increased hunter success and decrease in recreation days.

It appears hunter efficiency has increased, probably due to the use of modern technology for hunting.

What this means is that the individual hunter now has a greater effect on deer populations than in the past. Improvements in roads and vehicles have made it much easier for the average hunter to seek out most hunting areas.

POPULATION STATUS

Quadrat survey blocks established in the Parklands over the past three years have provided in-depth assessment of populations in this division.

Overall, large variation in population density occurs over the Parkland area. The extreme southeast Parkland area (Zones 16, 17) supports the highest densities (18 deer/sq. mile) on prime whitetail habitat land. Densities on prime whitetail habitat in remaining Parkland area ranges from 8 deer per square mile in the Yorkton area to 3 per square mile in the Thickwood Hills.

Population increases in the absence of winter mortality and restricted hunting seasons over the past few years should have been evident in Zones 18 and 19, but 1982 survey results compared to 1980 figures have not resulted in higher density estimates (population estimates) as was anticipated. Population estimate projected for Yorkton survey block in 1980 was 2,785 $\pm$ 22 percent compared to 2,792 $\pm$ 8 percent in 1982 (Table 49).

Current white-tailed deer densities in segments of the aspen Parklands can be compared to densities in the 1965 to 1968 period using data from the white-tailed quadrat survey and the Canada Land Inventory survey blocks (Table 51).

In general, current deer densities are similar to those of the 1965-1968 period except in the Manito, Pipestone and Swanson C.L.I. blocks (2/3, 2/3, 1/2 lower) and the St. Brieux and Whitkow blocks (2x, 10x higher).

Surveys carried out on a similar basis as in the Parkland division have not been established for the other ecological divisions.

Heavy reliance is made on field reports to gauge population status in the Forest division and field reports combined with aerial sampling of native habitat on various land forms in the Farmland and Grassland ecological division.

General assessment of populations in the Grassland zones would indicate slight build-up while Farmland populations appear relatively stable over the past few years.

Reports from the Forest zones indicate an overall strong healthy population. Some evidence from reports in the central forest area to suggest slightly lower deer numbers compared to Porcupine or Bronson forest areas.

WINTER SEVERITY ASSESSMENT - January-March 1982

Snow depth measurements were made weekly starting in January at several locations throughout the province by regional biologists, conservation officers and volunteers.

Snow accumulations approximating 46 cm. were reported south of the Trans-Canada Highway extending from the Manitoba-Saskatchewan border to Swift Current.

Considerably less snow accumulations were reported in the remainder of the province with snow depths ranging from 14 cm. to 35 cm. except for Pierceland-Loon Lake area where snow depths exceeded 50 cm.

Prolonged sub-zero temperatures accompanied by high winds predominated 1981-82 winter.

Air temperatures remained well below normal throughout January and much of February and March.

EFFECTS OF 1981-82 WINTER ON DEER

Below average temperatures, excessive snow and a delayed spring throughout southeast (much of G.M.Z.'s 16 and 17) and south-central (parts of G.M.Z.'s 1, 8 and 9) Saskatchewan resulted in significant winter deer mortality in these areas.

A feeding program was implemented in G.M.Z.'s 1, 7, 8, 9 and 16 by the Department of Tourism and Renewable Resources with the assistance of concerned private citizens, the Saskatchewan Wildlife Federation and other organizations such as the Regina Fish and Game League.

The feeding program generally was successful in reducing winter losses.

In areas of the affected zones where feeding could not be carried out or was started too late, winter losses approached 40 percent whereas in fed areas winter losses ranged from zero to about 20 percent. Winter conditions outside the feeding area were not severe enough to stress deer populations, but the delayed spring may have affected newborn fawn survival.

Late winter snowfall in northwest portion of Game Management Zone 32 and west side of Game Management Zone 33 may have contributed to significant winter deer loss in these areas.

1982 MANAGEMENT OBJECTIVES

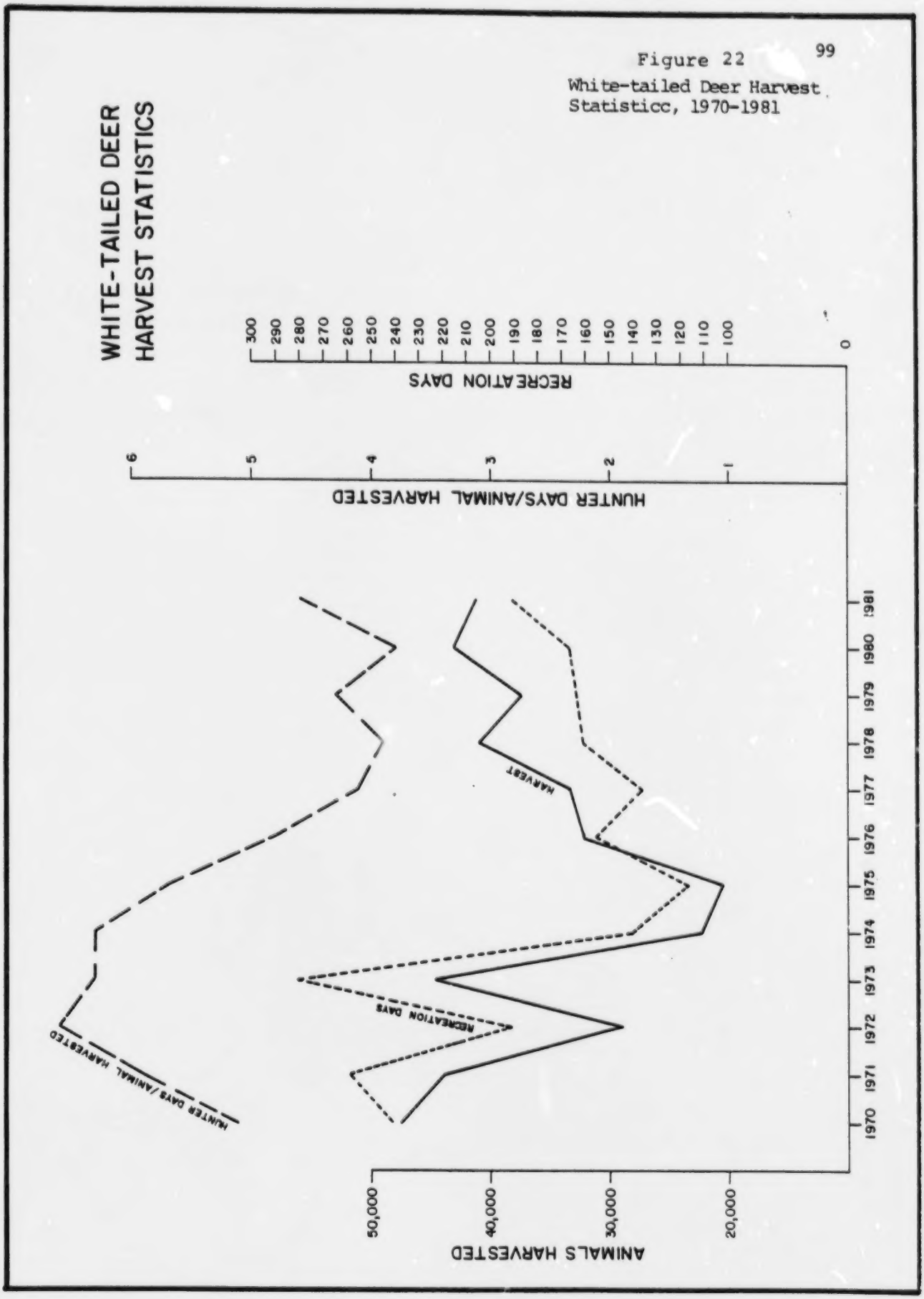
The 1982 white-tailed deer season was designed to address the problems identified in past years (recovery of G.M.Z.'s 18 and 19 and Grassland deer populations; under-utilized Forest deer populations), suspected heavy harvest in G.M.Z. 22 and significant winter mortality of deer in southeast and south central Saskatchewan.

Several new management concepts were designed but it was realized that revolutionary changes to the existing white-tailed deer sport hunting management format could only be achieved as an integral part of a long-term management proposal.

The 1982 season represents a basic hold-the-line approach attempting to react to the problems by altering season length and timing.

Appendix 18 provides the 1982 white-tailed deer regulations.

Figure 22
White-tailed Deer Harvest
Statisticc, 1970-1981



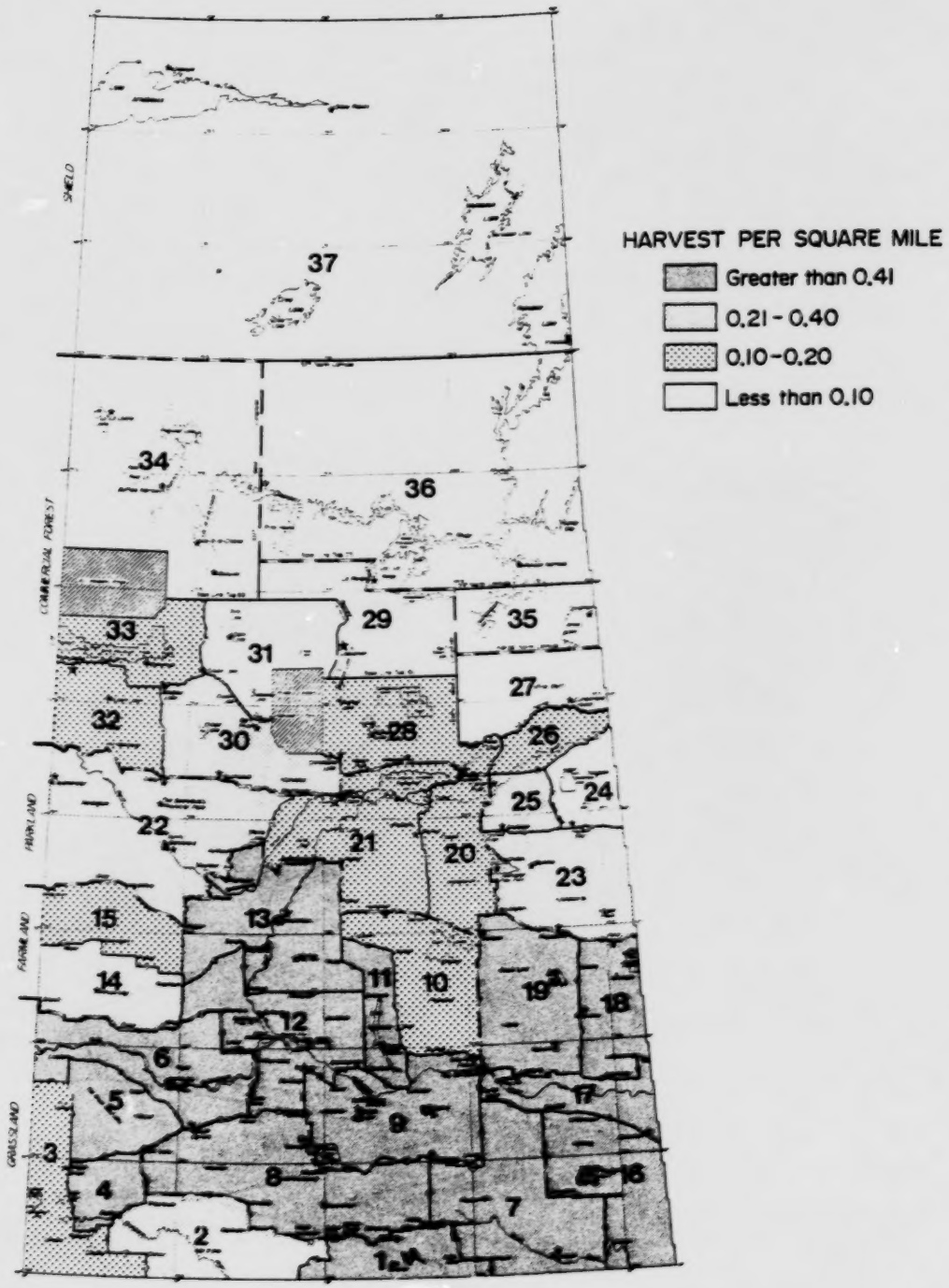


Figure 23 White-tailed Harvest Density, 1981

Table 37 PROVINCIAL WHITE-TAILED DEER HARVEST 1976-1981

Ecological Division	Harvest						Percent Hunter Success					
	1976	1977	1978	1979	1980	1981	1976	1977	1978	1979	1980	1981
Grassland	4,631	3,886	2,[illegible]1	5,035	3,524	4,224	62.2	58.6	73.4	56.0	62.3	56.2
Farmland	8,726	9,591	11,758	12,692	10,830	13,263	52.1	56.9	63.8	53.3	55.4	53.2
Parkland	14,839	13,058	15,780	13,089	17,376	15,109	64.2	48.5	72.6	55.9	63.1	54.9
Commercial Forest	3,814		10,207	6,363	11,024		43.2	46.7	60.3	41.3	58.6	
1st Licence Holder	---	5,976	---	---	---	5,912	---	---	56.1	---	---	38.3
2nd Licence Holder		2,786				2,641						43.4
Total	32,010	35,297	40,726	37,179	42,754	41,149	57.1	52.1	66.4	51.9	59.8	50.3

Table 38 WHITE-TAILED DEER HARVEST - GRASSLANDS 1976-1981

Zone	Harvest						Percent Hunter Success					
	1976	1977	1978	1979	1980	1981	1976	1977	1978	1979	1980	1981
1	363	374	283	439	392	542		86.6	86.0	57.7	74.4	62.1
2	843	418	499	850	529	738		53.8	78.7	71.4	61.6	57.7
3	447	443	283	521	298	444		70.0	88.2	64.2	56.7	63.4
4	886	622	459	519	415	512		55.6	78.5	46.9	68.2	57.1
5	725	848	469	1,237	877	866		61.7	61.9	54.7	64.0	53.5
6	1,367	1,208	988	1,469	1,013	1,122		51.8	68.9	51.2	58.1	52.3
Total	4,631	3,913	2,981	5,035	3,524	4,224		58.6	73.4	56.0	62.3	56.2

Table 39 WHITE-TAILED DEER HARVEST - FARMLANDS 1976-1981

Zone	Harvest						Percent Hunter Success					
	1976	1977	1978	1979	1980	1981	1976	1977	1978	1979	1980	1981
7	2,465	2,799	3,503	3,053	3,360	3,904	70.1	76.4	85.1	68.7	78.8	66.5
8	1,240	1,267	1,272	1,321	1,006	2,487	62.2	61.9	62.5	57.8	59.0	63.6
9	937	1,208	1,516	1,460	741	1,221	49.0	52.6	60.0	51.8	55.8	43.0
10	734	742	733	839	575	859	47.0	53.6	58.5	48.7	49.4	46.5
11	371	310	606	774	388	919	48.8	54.7	60.1	48.2	51.9	49.2
12	819	1,028	1,379	1,538	1,286	1,228	43.6	47.7	59.4	45.1	45.5	45.0
13	1,342	1,387	1,957	2,592	2,522	1,839	36.8	40.2	52.6	46.9	43.9	43.7
14	329	323	176	500	312	286	56.9	59.2	37.5	55.4	46,8	44.2
15	489	527	616	615	639	520	55.2	71.7	62.9	56.1	57.7	45.1
Total	8,726	9,591	11,758	12,692	10,829	13,263	52.1	56.9	63.8	53.3	55.4	53.2

Table 40 WHITE-TAILED DEER HARVEST - PARKLANDS 1976-1981

Zone	Harvest						Percent Hunter Success					
	1976	1977	1978	1979	1980	1981	1976	1977	1978	1979	1980	1981
16	5,336	4,245	4,481	5,012	7,306	5,683	86.6	62.1	87.7	74.8	77.8	69.2
17	1,199	1,160	1,330	766	1,934	1,628	73.0	55.1	77.3	51.4	61.0	55.0
18	1,105	1,351	1,663	989	1,747	919	62.3	55.3	74.8	53.9	62.1	59.2
19	1,662	1,758	2,446	1,563	1,319	1,718	62.9	48.5	71.9	51.6	54.7	54.6
20	506	358	459	360	603	369	49.3	38.7	61.3	44.4	51.8	36.6
21	1,612	1,567	2,123	1,287	1,985	1,205	45.0	37.7	58.9	42.0	46.5	35.2
22	3,419	2,618	3,278	3,112	4,230	3,587	54.1	38.4	66.9	48.0	59.4	49.7
Total	14,839	13,057	15,780	13,089	19,124	15,109	64.2	48.5	72.6	55.9	63.1	54.9

Table 41 WHITE-TAILED DEER HARVEST - COMMERCIAL FOREST 1978-1981

Zone	Harvest						Percent Hunter Success				
	1978	1979	1980	1981 1st	1981 2nd	1981 Total	1978	1979	1980	1981 1st	1981 2nd
23	2,551	1,661	2,863	1,504	700	2,204	70.4	41.2	54.3	39.6	40.9
24	476	246	381	163	56	219	57.3	26.4	52.9	30.3	30.6
25	862	432	893	424	105	529	56.1	37.9	56.5	37.7	30.9
26	519	313	540	270	164	434	56.7	31.1	51.3	33.9	53.2
27	56	207	160	77	43	120	14.1	61.1	50.0	29.7	60.0
28	1,689	778	1,808	925	430	1,355	58.3	39.7	55.4	35.0	43.3
29	98	88	160	15	0	15	42.7	26.9	50.0	8.7	0.0
30	1,670	891	1,808	1,002	594	1,596	64.0	40.8	56.0	35.0	45.9
31	178	164	278	270	93	363	46.6	33.2	57.1	48.6	47.4
32	1,004	1,063	1,343	655	298	953	58.2	51.5	60.3	41.7	53.6
33	388	475	700	578	158	736	50.2	57.6	80.3	56.4	45.6
34	19	46	56	22	0	22	32.8	44.2	40.0	37.5	0.0
35	N/A	N/A	13	7	0	7	N/A	N/A	33.3	33.3	0.0
36	N/A	N/A	28	0	0	0	N/A	N/A	33.3	0.0	0.0
Total	9,510	6,364	11,031	5,912	2,641	8,553	60.3	41.3	58.6	38.3	43.4

Table 42. Provincial White-tailed Deer Harvest 1960-1981.

YEAR	PROV. TOTAL	PARKLAND (% OF TOTAL)	LICENCE SALES
1960	35,088	49.1	46,193
1961	37,754	41.9	49,123
1962	25,068	49.7	44,750
1963	21,639	49.3	45,952
1964	26,521	43.2	50,300
1965	31,583	54.6	53,833
1966	35,332	54.2	60,148
1967	42,970	46.8	69,209
1968	40,033	47.1	79,304
1969	48,094	45.7	71,392
1970	47,655	39.5	71,046
1971	43,389	35.2	81,158
1972	29,023	29.6	68,381
1973	44,595	23.8	70,406
1974	22,335	27.9	52,615
1975	30,393	31.1	55,389
1976	32,010	46.4	58,443
1977	35,297	34.2	55,496
1978	40,726	38.7	66,112
1979	37,179	32.6	62,909
1980	42,754	44.7	65,034
1981	41,149	36.7	70,790
1960-1980 Avg.	35,688	41.1	60,819
1960-1969 Avg.	34,401	48.0	57,020
1970-1979 Avg.	36,260	34.1	64,196

Table 43. Parkland GMZ White-tailed Deer Harvest 1960-1981

YEAR	GAME MANAGEMENT ZONE 16 & 17	18	19	20	21	22	TOTAL
1960	9,267	1,321	1,827	1,211	1,687	1,932	17,245
1961	7,970	713	1,982	1,549	1,690	1,901	15,805
1962	7,302	790	1,206	680	864	1,624	12,466
1963	6,752	1,109	1,014	348	564	876	10,663
1964	5,528	1,278	1,797	644	859	1,352	11,458
1965	7,589	2,281	3,080	690	949	1,669	17,258
1966	10,348	2,562	2,999	515	707	2,018	19,149
1967	10,277	1,982	3,415	712	939	2,804	20,129
1968	2,522	2,494	3,311	796	1,233	3,488	18,844
1969	8,173	3,288	3,913	956	1,312	4,353	21,995
1970	4,740	3,829	2,771	1,558	2,445	3,476	18,819
1971	3,087	3,192	2,992	1,352	1,834	2,807	15,264
1972	3,124	969	1,474	524	903	1,608	8,602
1973	4,762	963	1,008	629	804	2,437	10,603
1974	2,602	617	684	379	445	1,499	6,226
1975	3,554	1,010	1,668	223	891	2,021	9,467
1976	6,535	1,105	1,662	506	1,612	3,419	14,839
1977	4,422	1,351	1,758	358	1,567	2,618	12,074
1978	5,811	1,663	2,446	459	2,123	3,278	15,780
1979	4,820	989	1,563	360	1,287	3,111	12,130
1980	9,240	1,747	1,319	603	1,985	4,230	19,124
1981	7,311	919	1,718	369	1,205	3,587	15,109
1960-1980 Avg.	6,401	1,679	2,090	717	1,271	2,501	14,659
1960-1969 Avg.	8,173	1,782	2,454	810	1,080	2,202	16,501
1970-1979 Avg.	4,346	1,569	1,803	634	1,391	2,627	12,370

Table 44 PROVINCIAL WHITE-TAILED DEER HUNTING PRESSURE 1978-1981

Ecological Division	Hunter Days				Hunter Days/Sq. Mile				Hunter Days/Animal			
	1978	1979	1980	1981	1978	1979	1980	1981	1978	1979	1980	1981
Grassland	8,504	16,423	11,316	14,441	0.4	0.8	.39	0.5	2.9	3.3	3.1	3.4
Farmland	39,879	46,100	39,346	50,058	0.9	1.0	.80	1.02	3.4	3.1	3.6	4.7
Parkland	58,772	57,060	67,377	66,230	1.7	1.7	1.9	1.87	3.7	4.4	2.9	5.9
Commercial Forest	51,536	44,969	50,696	59,394*	0.8	0.8	1.05	1.23	5.9	8.6	4.6	6.9
Total	158,691	164,552	168,735	190,123	0.9	1.1	1.04	1.16	3.9	4.4	4.0	4.6

* Total 1st and 2nd licence hunting activity.

Table 45. GRASSLAND WHITE-TAILED DEER HUNTING PRESSURE 1978-1981

Zone	Hunter Days				Hunter Days/Sq. Mile Habitat				Hunter Days/Animal			
	1978	1979	1980	1981	1978	1979	1980	1981	1978	1979	1980	1981
1	658	1,321	953	1,408	.25	.51 (1.20)	.33 (.85)	(1.26)	2.3	3.7	2.2	2.6
2	1,273	2,161	1,400	2,234	.27	.47 (.90)	.28 (.58)	(.92)	2.6	3.1	2.5	3.0
3	485	1,251	1,028	918	.13	.33 (.59)	.24 (.48)	(.43)	1.7	2.9	3.1	2.1
4	1,142	1,863	953	1,520	.66	1.10 (2.01)	.49 (1.01)	(1.61)	2.5	4.4	2.0	3.0
5	1,845	3,929	3,026	3,443	.64	.66 (3.10)	.50 (2.34)	(2.67)	3.9	3.9	3.4	4.0
6	3,101	5,898	3,956	4,918	.56	.78 (3.48)	.52 (2.29)	(2.73)	3.1	4.9	3.9	4.4
Total	8,504	16,423	11,316	14,441	.40	.78 (1.73)	.39 (1.17)	(1.49)	2.9	4.0	3.1	3.4

Table 46. FARMLAND WHITE-TAILED DEER HUNTING PRESSURE 1978-1981

Zone	Hunter Days				Hunter Days/Sq. Mile Habitat				Hunter Days/Animal			
	1978	1979	1980	1981	1978	1979	1980	1981	1978	1979	1980	1981
7	8,565	8,105	7,717	10,517	1.20	1.19 (4.81)	1.15 (4.46)	(6.1)	2.4	3.2	2.3	2.7
8	4,264	3,835	2,751	6,246	.51	.46 (2.31)	.32 (1.63)	(3.7)	3.4	3.6	2.7	2.5
9	5,500	5,722	3,777	6,636	.90	.96 (4.07)	.63 (2.62)	4.6	3.6	4.8	5.1	5.4
10	2,837	3,344	2,820	3,939	.62	.71	.60	.85	3.9	4.9	4.8	4.6
11	1,948	3,813	1,476	3,966	.99	1.98	.69	2.02	3.2	6.0	3.6	4.3
12	5,839	6,871	5,754	5,686	1.03	1.23	1.03 (3.61)	(3.57)	4.2	5.5	4.5	4.6
13	7,512	10,495	11,230	9,512	1.08	1.54	1.68 (6.49)	(5.50)	3.8	5.0	4.5	5.2
14	1,065	1,828	1,297	1,111	.31	.51 (2.57)	.33 (1.78)	(1.53)	6.1	4.5	3.9	3.9
15	2,449	2,088	2,524	2,445	.78	.68	.76	.78	4.0	4.1	3.8	4.7
Total	39,979	46,101	39,346	50,058	.85	.99	.80		3.4	4.4	3.6	3.8

Table 47. PARKLAND WHITE-TAILED DEER HUNTING PRESSURE 1978-1981

Zone	Hunter Days				Hunter Days/Sq. Mile Habitat				Hunter Days/Animal			
	1978	1979	1980	1981	1978	1979	1980	1981	1978	1979	1980	1981
16	11,488	13,122	16,921	17,126	2.31	2.68 (8.9)	3.4 (11.0)	(11.4)	2.6	3.2	2.3	3.0
17	3,975	3,150	7,745	6,343	1.5	1.22 (4.2)	2.9 (10.0)	(8.2)	3.0	5.0	3.9	3.9
18	6,503	4,622	6,057	2,927	2.1	1.5 (5.7)	1.9 (7.0)	(3.3)	3.9	5.7	3.4	7.8
19	9,462	7,137	5,155	7,180	1.8	1.4 (5.9)	.99 (4.0)	(5.9)	3.9	5.6	3.8	4.2
20	2,056	2,151	2,964	2,716	0.6	0.7	0.8	.8	4.5	7.3	4.7	7.4
21	9,730	7,938	10,452	8,684	1.5	1.3	1.6	1.4	4.6	7.5	5.2	7.2
22	15,558	18,940	18,043	21,252	1.6	2.1	1.9	2.3	4.6	7.4	4.2	5.9
Total	58,772	57,060	67,337	66,230	1.7	1.6	1.9		3.7	5.3	3.8	4.4

Table 48. COMMERCIAL FOREST WHITE-TAILED DEER HUNTING PRESSURE 1978-1981

Zone	Hunter Days				Hunter Days/Sq. Mile				Hunter Days/Animal			
	1978	1979	1980*	1981*	1978	1979	1980	1981	1978	1979	1980	1981
23	15,572	13,150	15,949	17,814	2.4	2.6	3.2	3.5	4.9	9.7	5.7	8.1
24	2,745	2,113	2,020	2,050	1.1	1.0	0.9	1.0	5.5	10.5	5.1	9.4
25	4,995	4,362	4,569	3,905	2.7	3.0	3.1	2.7	5.8	12.3	5.1	7.4
26	2,567	3,020	2,482	2,775	1.3	1.8	1.4	1.6	5.3	11.8	4.5	6.4
27	573	697	539	711	0.13	0.18	0.1	0.2	17.3	4.1	2.7	5.9
28	8,011	5,913	8,489	10,027	1.4	1.3	1.8	2.1	5.1	9.3	4.8	7.4
29	816	704	842	379	0.13	0.14	0.14	0.1	7.5	9.8	4.6	25.3
30	7,205	6,460	7,304	10,420	1.2	1.5	1.6	2.2	4.5	8.9	4.0	6.5
31	1,092	1,288	1,208	1,460	0.21	0.3	0.26	0.3	6.1	9.6	4.0	4.0
32	5,428	5,298	4,748	5,877	1.2	1.5	1.3	1.7	5.8	6.1	3.6	6.2
33	2,410	1,778	1,938	3,764	0.6	0.5	0.55	1.1	6.6	4.6	2.7	5.1
34	142	184	608	211	0.01	0.01	0.03	0.01	7.47	4.9	8.8	9.6
Total	51,556	44,967	50,696	59,393	0.76	0.83	1.05	1.07	5.3	8.6	4.6	6.9

* Total Hunter Days
1st & 2nd Licences

Table 49. White-Tailed Deer Population Estimate From Square Mile Quadrat Census, Yorkton Block, 1982

Stratum	Nh	nh	$\bar{X}h$	Sh^2	Wh	$\frac{Wh^2Sh^2}{nh}$	$\frac{WhSh^2}{N}$	Vst
A	196	81	8.51	66.35	.16	.021	.0087	
B	414	145	2.30	26.14	.34	.021	.0073	.026
C	604	31	0.00	0.00	.50	____	____	
N =	1,214					.042	.016	

Nh = Number of Sampling Units/Stratum

nh = Number of Sampling Units sampled/Stratum

$\bar{X}h$ = Strata Means

Sh^2 = Strata Variances

Wh = Strata Weights (Nh/N)

Vst = Variance of Stratified = $S^2\bar{X}st = \frac{Wh^2Sh^2}{nh} - \frac{WhSh^2}{N}$

N = Total Number Sampling Units

Population Estimate

1982	1980
2,792 ± 381 (13.6%) @ 95% level	
2,792 ± 248 (8.9%) @ 80% level	2,785 ± 22 percent @ 80% level

Table 50, White-Tailed Deer Population Estimate From Square Mile Quadrat Census, Pleasantdale Block, 1982

Stratum	Nh	nh	$\bar{X}h$	Sh^2	Wh	$\frac{Wh^2Sh^2}{nh}$	$\frac{WhSh^2}{N}$	Vst
A	161	88	3.91	22.88	0.14	0.0051	.0028	.0023
B	610	209	0.96	5.50	0.53	0.0074	.0025	
C	381	43	0.00	0.00	0.33			

Nh = Number of Sampling Units/Stratum

nh = Number of Sampling Units sampled/Stratum

$\bar{X}h$ = Strata Means

Sh^2 = Strata Variances

Wh = Strata Weights (Nh/N)

Vst = Variance of Stratified Mean = $S^2\bar{X}st = \frac{Wh^2Sh^2}{nh} - \frac{WhSh^2}{N}$

Population Estimate

1,106 $\pm$ 108 (9.79%) @ 95% level

1,106 $\pm$ 71 (6.4%) @ 80% level

Table 51 White-tailed deer densities: mid 60's vs present

MAP AREA	GMZ	MID-60's	PRESENT	ASSESSMENT
Weyburn-Virden	16	Mair CLI 1965 12.95/mi^2 1966 14.25 1967 15.80 1968 9.07	Spyhill Quad. Survey 1979 17.08/mi^2 1980 11.84	Densities Equal
Melville-Riding Mtn	16	Pipestone CLI 1965 14.76/mi^2 1966 16.84 1967 15.28 1968 9.07	Spyhill Quad. Survey 1979 5.67/mi^2 1980 3.5	Current Densities 1/3 of 60's
		surveys not directly comparable		
Yorkton	19	Beaver Hills CLI 1965 9.3/mi^2 1966 11.1 1967 12.7 1968 10.4	Yorkton Quad. Survey 1980 15.45/mi^2 1982 11.57	Densities Equal
Yorkton	19	Whitesand CLI 1965 2.07/mi^2 1966 2.07 1967 4.92 1968 2.85	Yorkton Quad. Survey 1980 5.14/mi^2 1982 3.4	Densities About Equal
Melfort	21	St. Brieux CLI 1965 2.06/mi^2 1966 1.50 1967 1.13	Pleasantdale Quad. Survey 1982 3.8/mi^2	Current Densities Twice as High as 60's
Rosetown	13	Swanson CLI 1965 5.49/mi^2 1966 4.30	Swanson CLI 1980 2.40/mi^2	Current Densities 1/2 of 60's
Saskatoon	22	Whitkow CLI 1965 0.38/mi^2 1966 0 1967 0.44 1968 0.69	Thickwood Hills Quad. Survey 1981 5.09.mi^2	Current Density 10x 60's

MAP AREA	GMZ	MID-60's	PRESENT	ASSESSMENT
North Battleford	22	Manito Dunes CLI 1965 15.95/mi^2 1966 14.19	Manito Quad. Survey 1980 4.81/mi^2	Current Densities 1/3 of 60's
North Battleford	22	Freemont CLI 1965 2.62/mi^2 1966 2.43	Manito Quad. Survey 1980 2.92/mi^2	Current Densities Slightly Higher than 60's

Technique:

Whitetail densities on CLI blocks (4 mi x 4 mi = 16mi^2 (41.4 km^2)) subjected to 100% coverage in mid-winter 1965, 1966, 1967 and 1968 were compared to corresponding quadrats from the white-tailed deer quadrat surveys in 1979, 1980, 1981 and 1982. Only densities from the Swanson CLI block (GMZ 13) are directly comparable but except for the Pipestone CLI block, all quadrats used in the comparisons are from the same township as the CLI blocks.

MOOSE

FOREST ZONES

Review of 1981 Season

Licences

Type	1977	1978	1979	1980	1981
Special	4,150	3,249	3,616	2,355	2,400
Regular	8,357	8,856	10,230	11,077	10,542
Guided	401	394	355	284	290
Total	12,908	12,499	14,201	13,716	13,232

Harvest

- Northern moose harvest was 2,247 animals compared to 5,152 animals in 1980.
- 579 moose were taken in the special seasons and 1,668 during the regular season (Tables 52 and 53.
- Lowest harvest recorded in the past 15 years (Figure 24).
- The direct cause of this harvest decline was a corresponding decrease in the hunting success, as the amount of moose hunting activity remained relatively unchanged.
- The main factor for the poor hunting success and associated lower harvest was extremely unfavourable weather conditions for hunting.
- Hunting success and harvest was most negatively affected by hunting conditions in Zones 24, 25 and 30. Poor weather conditions could have affected hunters mobility more in these zones.
- The estimated cow harvest was 584 animals or 26 percent of the total harvest (Table 58).
- The calf harvest was 605 animals or 27 percent of the total harvest.
- Information from checking stations indicated a shift to more adults than calves or yearlings in the harvest (Figure 26). Yearling age component was lower in the harvest than 1980 age structure.

- Mean age structure in both the cow and bull populations have remained relatively stable (Table 61).

Population Status

- Excluding Zones 34 to 37, the northern moose population dropped 8 percent from the 1981 level (Table 62).
- As depicted in Figure 27, moose populations are slightly below the long term average.
- Regionally, areas such as Cumberland Delta indicated unchanged populations while Leaf Lake and Porcupine West populations showed positive gains. Although poor survey conditions were prevalent in the Divide block, there is a cause for some concern as this was the third consecutive year for a decline of moose numbers.
- It is evident from the survey information collected by Department of Northern Saskatchewan personnel, that moose are in extremely low numbers in much of Zones 34 to 36 (Table 63).
- Moose densities in the Fishing Lakes burn area of Zones 28 and 29 show gradual upward trend (Table 64).
- Poor survey conditions in December limited the extent of sex and age classification counts. Available information indicated further low calf/cow ratio in the Cumberland population (Table 65).

Moose Energy Index

- Limited information is available from 1982 to show mean periods of positive and negative energy balance for moose in Saskatchewan.
- An energy index derived from a ratio of the non-green period to the green period was developed to assess energy balance in moose.
- Leaf flush was not determined in 1981, but based from the knowledge of an early spring, leaf flush probably occurred before May 17. This was the mean date of leaf flush found in east central Saskatchewan between 1959 and 1975.
- Mean date for leaf fall was October 3. Information collected in Meadow Lake area in 1981 indicated leaf fall by September 30.

Considerable variation in browse species was evident as aspen showed 40 percent leaf fall on September 30 while willow was 10 percent.

- With a relatively long growing season last year, moose should have entered the winter in good condition.

Winter Severity Assessment

- Although temperatures were cold during January to March period, snow accumulations over much of the moose range were low.
- Portions of Zone 32 (Loon Lake) and 33 (Pierceland), however, were subject to heavy snowfall in late February and early March. With this late snowfall, snow accumulations exceeding 50 cm. were reported.
- Overwinter losses should be minimal over much of the moose range, but significant calf and yearling mortality losses were reported from the Meadow Lake area.

Problems

- Low moose populations in central zones and northern region (Zones 34 to 36).
- Reduced moose population in Zone 30.
- Winter mortality in portions of Zones 32 and 33.
- Forest road access in Game Management Zones 28, 29 and 31.
- Poor calf survival in Cumberland Delta.

1982 Management Objectives

- The 1982 hunting seasons were designed to address some of the problems identified (low moose populations in Game Management Zones 30, 32 and 33; forest road access in Game Management Zones 28, 29 and 31).
- It was also recognized that management studies would have to be implemented to investigate calf mortality in Game Management Zones 26 and 27 and determine methods of increasing moose populations in Game Management Zones 34 to 36.
- Appendix 18 presents 1982 moose hunting regulations.

PROVINCIAL PARKS AND WILDLIFE MANAGEMENT UNITS

Review of 1981 Season

Harvest

Game Management Zone 16 (Moose Mountain Park)

- Harvest reported from hunter questionnaire survey was 90 animals.
- Comparing projected kill and actual kill (from telephone survey) indicated a bias towards inflated kill projections.
- The actual kill was 58 animals.
- Hunter questionnaire bias was 90 divided by 58 = 1.55
- Hunter success was 36 percent.

Game Management Zones 3 and 4 (Cypress West Block)

- Hunter questionnaire projected harvest was 42 compared to 25 reported at checking station.
- Hunter questionnaire bias was 1.68.
- Hunter success was 50 percent.

Game Management Zone 22

- Projected harvest was 56 animals.
- Actual harvest (hunters sampled in separate Zone 22 survey) was 27 animals.
- Hunter kill bias was 2.07.
- Hunter success was 61.4 percent.

Average hunter kill bias as determined from three areas surveyed was $\frac{188}{110} = 1.71$.

Game Management Zone 18 (Duck Mountain Park)

- Projected harvest was 36 animals but considering the bias, the calculated harvest was 21 animals.

Game Management Zone 21 (Fort-a-la-Corne)

- Calculated harvest was 34 animals compared to 58 projected in the hunter questionnaire survey.
- Hunter success was 18.9 percent compared to 39.4 reported in the questionnaire survey.

Greenwater Park

- Moose harvest was 10 animals for 20 percent hunter success rate.

Population Status

Moose Mountain Park

- A minimum of 400 moose were believed to be distributed in the Moose Mountain uplands in the 1970's.
- A square kilometer qudrat census was conducted in January 1982 and population estimate was 205 animals ± 17 percent (80 percent level of confidence).
- The moose population of 205 ± 17 percent is less than half of the 1970 estimates.

Duck Mountain Park

- Population estimate derived from 1982 transect survey was 400 animals.
- Population status remained relatively unchanged from mid 1970 estimates.

Fort-a-la-Corne

- Transect surveys have not been conducted for the past two years.
- Population density in 1980 was .72 animals/sq. mile.
- 1980 population estimate of 350-400 animals.
- Field reports indicate lower population than 1980 (250-300 animal range).

Cypress Hills

- West Block population is declining. The primary reason for the decrease is forest maturity.
- Populations in the east block (Zone 4) appear to be gradually increasing.

Thickwood Hills (Zone 22)

- 1982 winter survey was not conducted.
- Field reports indicate the very successful sport hunting season combined with heavy unregulated hunting pressure has probably reduced moose numbers in the Thickwood Hills region.

1982 Management Objective

Moose Mountain Park (Game Management Zone 16)

- Harvest and survey data suggested sport harvest combined with increased unregulated harvest contributed to reduced Moose Mountain moose population.
- In order to achieve population growth the 1982 moose hunting season will be closed.

Cypress Hills (Game Management Zones 3 and 4)

- Alternate years have been used in regulating Cypress Hills moose season, thus this area will not be open in 1982.
- It is recognized that moose numbers are declining and forestry-wildlife management plans are required to revitalize the forest habitat and enhance moose populations.
- Future seasons may be closed until habitat programs can be implemented to assist moose recovery.

Duck Mountain Park (Game Management Zone 18)

- Present management format will be maintained as the existing hunting regime appears to be maintaining stable moose population.

Fort-a-la-Corne (Game Management Zone 21)

- Harvest data suggest moderation of harvest to achieve some population growth.
- The 1982 licence quota was adjusted to accommodate this objective.

Thickwood Hills

- Harvest data and field report information suggested heavy regulated and unregulated pressure on Game Management Zone 22 moose populations.
- Short term objective will be to close 1982 season for necessary recovery in population.

Greenwater Park

- Maintain management status quo as population levels have remained unchanged.

Appendix 18 presents the park moose hunting regulations.

Table 52 SPECIAL MOOSE SEASON HARVEST 1978-1981

Zone	Licences Allotted				Harvest				Percent Hunter Success			
	1978	1979	1980	1981	1978	1979	1980	1981	1978	1979	1980	1981
23	500	503	451	400	196	225	247	130	43.1	45.6	59.0	36.5
24	401	401	400	402	160	102	207	54	43.8	26.0	55.7	15.1
25	400	401	201	300	178	150	94	69	49.0	38.2	50.3	25.8
26	201	200	200	201	98	84	121	64	53.5	42.9	65.0	35.8
27	200	184	100	102	72	82	37	41	39.3	45.6	40.0	45.1
28	201	200	0	0	77	53	--	--	42.3	26.9	0.0	0.0
29	200	200	0	0	67	55	--	--	37.0	28.1	0.0	0.0
30	458	525	400	400	129	141	131	61	31.0	27.4	35.2	17.1
31	101	102	0	0	28	49	0	--	30.2	48.9	0.0	0.0
32	487	800	502	504	236	355	227	128	53.3	45.2	48.6	28.5
33	100	100	101	100	20	40	60	10	22.7	41.4	63.8	22.0
Total	3,249	3,616	2,355	2,409	1,261	1,336	1,124	579	42.6	39.7	50.8	27.0

Table 53 REGULAR MOOSE SEASON HARVEST 1978-1981

Zone	Harvest				Percent Hunter Success			
	1978	1979	1980	1981	1978	1979	1980	1981
23	660	713	1,124	495	33.5	24.6	38.1	18.0
24	164	214	218	59	27.0	20.4	26.0	6.1
25	198	237	343	112	27.3	25.2	33.9	12.5
26	280	114	385	172	40.8	13.0	37.1	17.8
27	290	202	192	41	46.4	33.7	45.1	14.6
28	194	143	285	153	22.6	13.4	25.0	13.8
29	46	79	109	59	19.0	21.2	28.3	24.3
30	141	180	310	99	22.1	21.0	31.9	10.6
31	115	209	251	132	21.4	28.2	35.3	20.2
32	197	194	335	224	32.2	22.3	33.6	22.8
33	63	42	151	54	25.9	15.8	34.0	19.5
34	8	50	58	27	7.4	24.1	25.9	21.1
35	45	21	58	13	25.0	13.6	31.8	15.4
36	139	79	142	7	43.1	36.7	39.5	5.6
37	46	14	67	21	42.1	18.2	80.0	42.9
Total	2,542	2,519	4,028	1,668	30.0	25.8	38.5	18.4

Table 54. SPECIAL MOOSE HARVEST AND HUNTER-DAYS BY WEEK 1981

Week Beginning	Harvest	Percent of Total Harvest	Hunter-Days	Percent of Total Hunter-Days
September 14	101	17.5	1,705.23	19.7
September 21	10	1.8	268.34	3.1
September 28	9	1.6	86.56	1.0
October 26	29	4.9	103.87	1.2
November 2	264	45.5	4,232.78	48.9
November 9	166	28.7	2,259.22	26.1
Total	579	100.0	8,656.0	100.0

Table 55. REGULAR MOOSE HARVEST AND HUNTER DAYS BY WEEK, 1981

Week Beginning	Harvest	Percent of Total Harvest	Hunter Days	Percent of Total Hunter-Days
August 31	-	-	40.03	0.1
September 7	-	-	200.14	0.5
September 14	15	0.9	600.42	1.5
September 21	37	2.2	400.31	1.1
September 28	-	-	-	0.0
October 5	555	33.3	8,365.85	20.9
October 12	7	0.4	160.11	0.4
October 19	7	0.4	160.11	0.4
October 26	15	0.9	120.08	0.3
November 2	28	1.7	760.53	1.9
November 9	28	1.7	680.48	1.7
November 16	447	26.8	16,451.51	41.1
November 23	529	31.7	12,048.43	30.1
Total	1,668	100.0	40,028.0	100.0

Table 56. SPECIAL MOOSE SEASON HUNTING PRESSURE 1978-1981

Zone	Hunter Days				Hunter Days/Sq. Mile Habitat				Hunter Days/Animal			
	1978	1979	1980	1981	1978	1979	1980	1981	1978	1979	1980	1981
23	1,961	2,274	2,087	1,533	0.9	1.0	0.9	0.7	10.0	10.1	8.4	3.8
24	1,530	1,503	1,231	1,511	0.9	0.9	0.8	0.9	9.6	14.7	5.9	3.8
25	1,482	1,528	879	980	1.6	1.7	1.0	1.1	8.3	10.2	9.4	3.3
26	743	835	706	802	0.7	0.8	0.6	0.7	7.6	9.9	5.8	4.0
27	792	863	353	229	0.7	0.8	0.3	0.2	11.0	10.5	9.5	2.2
28	749	812	0	0	0.2	0.2	0.0	0.0	9.7	15.3	0.0	0.0
29	803	628	0	0	0.1	0.1	0.0	0.0	12.0	11.4	0.0	0.0
30	1,899	2,084	1,572	1,280	0.8	1.0	0.7	0.6	14.7	14.8	12.0	3.2
31	458	419	0	0	0.1	0.1	0.0	0.0	16.4	8.6	0.0	0.0
32	1,930	3,487	1,793	1,897	1.0	2.0	0.9	1.0	8.2	9.8	7.9	3.8
33	422	294	219	424	0.1	0.1	0.09	0.2	21.1	7.4	3.7	4.2
Total	12,769	14,727	8,840	8,656	0.5	0.6	0.6	0.6	10.1	11.0	7.9	3.6

Table 57 REGULAR MOOSE SEASON HUNTING PRESSURE 1978-1981

Zone	Hunter Days				Hunter Days/Square Mile Habitat				Hunter Days/Animal			
	1978	1979	1980	1981	1978	1979	1980	1981	1978	1979	1980	1981
23	9,612	13,523	12,805	11,252	4.2	5.9	5.6	4.9	14.5	19.0	11.4	22.7
24	2,496	3,664	3,520	3,515	1.6	2.3	2.2	2.2	15.2	17.0	16.1	59.6
25	2,968	3,652	4,103	3,378	3.3	4.1	4.6	3.8	15.0	15.4	12.0	30.1
26	2,607	3,316	3,457	3,599	2.5	3.2	3.2	3.3	9.3	29.1	9.0	20.9
27	1,515	2,318	570	843	1.4	2.2	0.5	0.7	5.2	11.5	3.0	20.6
28	3,657	3,781	4,637	4,174	1.0	1.1	1.4	1.3	18.8	26.4	16.3	27.3
29	871	1,229	1,122	693	0.2	0.2	0.2	0.1	18.9	15.6	10.3	11.7
30	2,421	3,207	3,728	3,808	1.2	1.5	1.8	1.8	17.2	17.8	14.9	38.5
31	1,932	2,762	2,389	2,673	0.6	0.9	0.8	0.9	16.8	13.2	9.5	20.3
32	2,830	3,604	3,626	3,759	1.6	2.0	2.0	2.1	14.4	18.6	10.8	16.8
33	989	1,080	1,437	787	0.4	0.5	0.7	0.4	15.7	25.7	9.5	14.6
34	418	602	726	477	0.02	0.04	0.05	0.03	52.3	12.0	12.5	17.7
35	1,014	748	930	360	0.3	0.2	0.3	0.1	22.5	35.6	16.0	27.7
36	933	991	774	520	0.04	0.04	0.03	0.02	6.7	12.5	5.5	74.3
37	310	351	218	190	0.005	0.006	0.004	0.003	6.7	25.1	3.3	9.0
Total	34,573	44,828	44,042	40,028	0.3	0.4	0.4	0.33	14.0	17.8	11.3	24.0

Table 58 PERCENT SEX COMPOSITION IN COMBINED MOOSE HARVEST 1979-1981

Zone	Bulls			Cows			Calves		
	1979	1980	1981	1979	1980	1981	1979	1980	1981
23	55.3	62.9	48.5	21.8	20.8	23.1	22.9	16.3	28.2
24	56.3	64.3	41.9	31.3	21.4	45.1	12.4	14.3	12.9
25	54.6	63.8	44.1	28.4	20.7	30.2	17.0	15.5	25.5
26	65.3	56.7	46.2	22.5	21.6	31.4	12.2	21.6	22.2
27	52.5	70.8	23.8	27.1	12.5	42.8	20.4	16.7	33.3
28	50.0	74.1	68.1	29.0	0.0	0.0	21.0	25.9	31.8
29	51.9	88.9	77.7	33.3	0.0	0.0	14.8	11.1	22.2
30	36.6	56.4	47.3	42.3	16.4	23.6	21.1	27.3	28.9
31	55.8	89.3	80.0	17.3	0.0	0.0	26.9	10.7	20.0
32	34.8	59.2	35.1	46.2	22.4	30.8	19.0	18.4	34.0
33	44.4	68.0	42.1	38.9	24.0	42.1	16.7	8.0	15.7
34	87.5	100.0	62.5	0.0	0.0	0.0	12.5	0.0	37.5
35	33.3	100.0	50.0	0.0	0.0	0.0	66.7	0.0	50.0
36	81.8	80.0	100.0	0.0	0.0	0.0	18.2	20.0	0.0
37	50.0	85.7	33.3	0.0	0.0	0.0	50.0	14.3	66.7
Total	50.4	64.7	57.0	30.1	18.0	26.0	19.5	17.3	27.0

Table 59 SEX COMPOSITION IN SPECIAL SEASON MOOSE HARVEST 1978-1981

Zone	Bulls				Cows				Calves			
	1978	1979	1980	1981	1978	1979	1980	1981	1978	1979	1980	1981
23	53.3	38.8	36.6	32.8	43.1	42.9	52.1	47.7	3.6	18.3	11.3	19.5
24	55.8	32.3	52.6	34.7	38.4	58.8	31.6	60.8	5.8	8.9	15.8	4.5
25	57.2	38.2	33.3	29.6	36.7	45.5	50.0	48.1	6.1	16.3	16.7	22.3
26	50.0	51.5	38.2	24.1	45.9	33.3	47.1	58.6	4.1	15.2	14.7	17.3
27	49.1	35.5	25.0	17.6	42.3	51.6	75.0	52.9	8.5	12.9	0.0	29.5
28	62.9	22.2	0.0	0.0	33.9	55.6	0.0	0.0	3.2	22.2	0.0	0.0
29	63.9	43.8	0.0	0.0	27.9	43.8	0.0	0.0	8.2	12.4	0.0	0.0
30	42.6	32.6	40.0	34.7	46.5	58.7	36.0	39.1	10.9	8.7	24.0	26.2
31	53.6	34.8	0.0	0.0	29.3	39.1	0.0	0.0	7.1	26.1	0.0	0.0
32	52.4	29.8	39.5	21.3	36.5	54.2	39.5	46.0	11.1	16.0	20.9	32.7
33	46.7	25.0	25.0	27.2	46.7	58.3	75.0	72.8	6.7	16.7	0.0	0.0
Total	53.4	35.1	39.6	27.0	39.7	49.4	45.7	50.0	6.9	15.5	14.7	21.0

Table 60 SEX COMPOSITION IN REGULAR SEASON MOOSE HARVEST 1978-1981

ZONE	Percent Bulls				Percent Calves			
	1978	1979	1980	1981	1978	1979	1980	1981
23	75.0	71.7	80.3	63.3	25.0	28.3	19.8	36.7
24	90.0	83.3	88.9	62.5	10.0	16.7	11.1	37.5
25	74.0	81.8	85.3	68.7	26.0	18.2	14.7	31.3
26	73.0	93.8	72.5	72.0	27.0	6.2	27.5	28.0
27	84.0	71.4	80.0	50.0	16.0	28.6	20.0	50.0
28	70.0	75.0	74.1	68.1	30.0	25.0	25.9	31.9
29	55.0	63.6	88.9	77.7	45.0	26.4	11.1	22.3
30	70.0	44.0	70.0	83.3	30.0	56.0	30.0	16.7
31	82.0	72.4	89.3	80.0	18.0	27.6	10.7	20.0
32	53.0	59.3	84.8	60.6	47.0	40.7	15.1	39.4
33	64.0	83.3	88.2	62.5	36.0	16.7	11.8	37.5
34	100.0	100.0	100.0	25.0	0.0	0.0	0.0	75.0
35	90.0	33.3	100.0	50.0	10.0	66.7	0.0	50.0
36	80.0	81.8	80.0	100.0	20.0	18.2	20.0	0.0
37	100.0	50.0	85.7	33.3	0.0	50.0	14.3	66.7
Total	74.2	74.3	81.3	65.0	25.8	25.7	18.7	34.0

Table 61. AGE COMPOSITION IN MOOSE HARVEST

Age Class	1978		1979		1980		1981	
	Cows	Bulls	Cows	Bulls	Cows	Bulls	Cows	Bulls
1½	29	85	20	81	22	64	15	63
2½	24	74	22	50	16	57	6	46
3½	12	57	11	41	9	48	9	46
4½	14	28	14	28	6	38	8	28
5½	8	16	6	10	3	25	2	21
6½	7	13	6	10	8	17	4	20
7½	4	6	5	3	3	10	7	7
8½	5	11	7	3	1	7	0	9
9½	0	3	2	5	5	6	2	4
10½	1	4	5	5	7	1	2	2
11½	0	1	0	1	3	2	1	1
12½	1	2	1	1	6	2	2	0
Mean	3.74	3.52	4.44	3.39	5.19	3.88	4.66	3.81

Table 62. MOOSE DENSITIES IN AERIAL SURVEY BLOCKS 1973-1982

AREA	SQ. MI.	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	Average	Change 1981	Change from Average
Porcupine East	110	----	----	----	0.85	1.60	0.58	0.99	1.25	1.23	0.94	1.08	-23	-13
Porcupine West	77.6	----	1.26	1.58	1.29	1.26	1.10	2.44	1.52	1.21	1.41	1.31	+17	+ 8
Leaf Lake	125	----	----	----	0.64	1.26	1.38	1.14	0.76	0.75	1.30	0.98	+71	+32
Greenwater	16.5	----	1.94	0.48	0.85	1.15	0.36	0.73	0.73	0.54	0.48	0.84	-11	-57
Cumberland South	145	0.76	1.37	1.26	1.46	1.30	1.30	1.52	1.35	1.26	----	1.26	---	---
Cumberland Central	41	1.05	1.68	0.88	1.00	1.61	1.22	1.29	1.02	1.90	1.07	1.28	-43	-16
Pine Bluff	46	2.22	2.41	2.52	2.54	1.71	3.13	3.02	2.00	2.35	2.43	2.52	+03	- 3
*Elaine Lake	119.2	0.28	0.31	0.36	0.18	0.32	0.23	0.47	----	----	----	----	---	---
***Connell Creek	29.0 ***45.0	----	----	----	----	----	----	----	3.10	3.06	1.84	----	-39	-39
White Swan	79.5	----	----	0.64	0.26	0.28	0.33	0.46	----	----	----	----	---	---
Candle Lake East	97	0.39	0.26	0.39	0.24	0.61	0.39	0.44	0.22	0.40	----	0.45	---	---
Torch River	76	----	----	----	0.66	0.53	0.88	0.68	0.55	0.54	0.46	0.60	-14	-23
Dore South	242	0.36	0.56	0.35	0.37	0.60	0.33	0.84	0.71	0.50	0.43	0.53	-14	-19
**Waterhen Keeley	**136.5 182	0.58	0.65	0.52	0.37	0.70	0.61	0.72	0.86	0.54	----	0.70	---	---
Cold Lake	96	0.95	0.76	0.57	0.60	0.79	0.67	0.88	0.77	0.75	----	0.76	---	---
Divide	163	0.50	0.61	0.86	0.87	1.08	0.72	1.37	1.20	1.02	0.69	0.91	-32	-24
Bronson	151.4	----	1.41	1.26	1.33	1.53	1.60	1.33	1.44	1.10	----	1.41	---	---
Meadow Lake Park	150	----	----	----	----	----	----	----	----	----	0.59	----	---	---
PROVINCIAL AVERAGE		0.55	0.67	0.85	0.77	1.09	0.91	1.15	1.07	0.97	0.89	0.94	-8.2	-5.3

* Not included in average. ** Revised Survey in 1980. *** New or Revised Survey in 1981.

Table 63. A Summary of the Individual Survey Blocks in Zones 34 to 36 with Respective Moose Population Levels, 1982

Area	Block Size	Number Observed	Density
La Loche	144 sq. mi.	3	.05
Turnor Lake	144 sq. mi.	1	.01
Buffalo	72 sq. mi.	5	.17
McMahon	144 sq. mi.	3	.05
McCusker	144 sq. mi.	32	.55
Deschambault	144 sq. mi.	1	.01
Pelican	144 sq. mi.	2	.03
Sandy Bay	144 sq. mi.	4	.06
Scimitar	144 sq. mi.	3	.05
Maraiche	159 sq. mi.	7	.11

Table 64. FISHING LAKES BURN

WINTER MOOSE DENSITY SURVEYS, 1978-1982

- Total Survey Block - 462 sq. miles

Year	Density	Projected Population
1978	.252	116
1979	.143	66
1980	.277	127
1981	.190	87
1982	.354	163

Table 65 DECEMBER MOOSE SEX AND AGE SURVEY

BULLS / 100 COWS / CALVES 1977-1981

	1977		1978		1979		1980		1981	
ZONE	B/C	C/C	B/C	C/C	B/C	C/C	B/C	C/C	B/C	C/C
23	70	42	36	40	41	61	39	55	no snow	
24	100	32	67	34	78	41	36	39	no snow	
25	114	79	41	48	55	25	40	54	no snow	
26	160	42	89	40	120	35	49	64	48	33
27	40	82	36	63	39	45	41	36	36	29
28	120	57	28	48	—	—	33	35	--	--
29	82	57	45	51	—	--	—	--	—	—
30	—	—	47	60	23	45	51	64	32	57
31	65	78	30	39	36	34	100	41	--	--
32	30	70	30	50	44	45	47	57	26	50
33	71	51	39	46	—	—	31	52	--	--
AVE.	85	59	49	47	51	41	47	48	53	52

Table 66 MOOSE SEASON HARVEST

PARKS AND WILDLIFE MANAGEMENT UNITS 1979-1981

Zone	Harvest			Kill Per Sq. Mile			Hunter Success		
	1979	1980	1981*	1979	1980	1981	1979	1980	1981
3	42	--	42	.65	--	.32	89.7	--	77.3
16	104	109	90	.68	.71	.59	63.3	66.7	45.5
18	27	37	36	.27	.37	.36	28.9	39.3	38.2
21	57	83	58	.14	.21	.15	30.7	44.6	39.4
22	--	22	56	--	--	--	--	47.4	75.6
23G	--	--	10	--	--	--	--	--	20.0

HUNTER ACTIVITY

Zone	Hunter Days			Hunter Days/Sq. Mile			Hunter Days/Animal		
	1979	1980	1981*	1979	1980	1981	1979	1980	1981
3	165	--	132	2.54	--	1.25	3.92	--	3.88
16	631	569	719	4.10	3.69	4.7	6.10	5.22	10.12
18	399	400	319	3.25	3.96	3.2	14.78	10.8	9.38
21	791	859	729	1.97	2.14	1.8	13.88	10.3	10.26
22	--	190	207	--	--	--	--	8.6	6.08

* Zone 3 & 4 total.

SEX COMPOSITION IN HARVEST

Zone	Bulls		Cows		Calves		Bulls/Cows/Calves	
	1980	1981	1980	1981	1980	1981	1980	1981
16	33.3	33.9 (18)	40.0	35.8 (19)	26.7	30.1 (16)	83/100/67	94/100/84
18	25.0	22.2 (4)	75.0	55.5 (10)	0.0	22.2 (14)	33/100/0.0	40/100/40
21	61.5	60.7 (17)	23.1	28.5 (8)	15.4	10.7 (3)	266/100/67	212/100/37
22	55.6	42.8 (12)	22.2	46.4 (13)	22.2	10.7 (3)	250/100/100	92/100/23

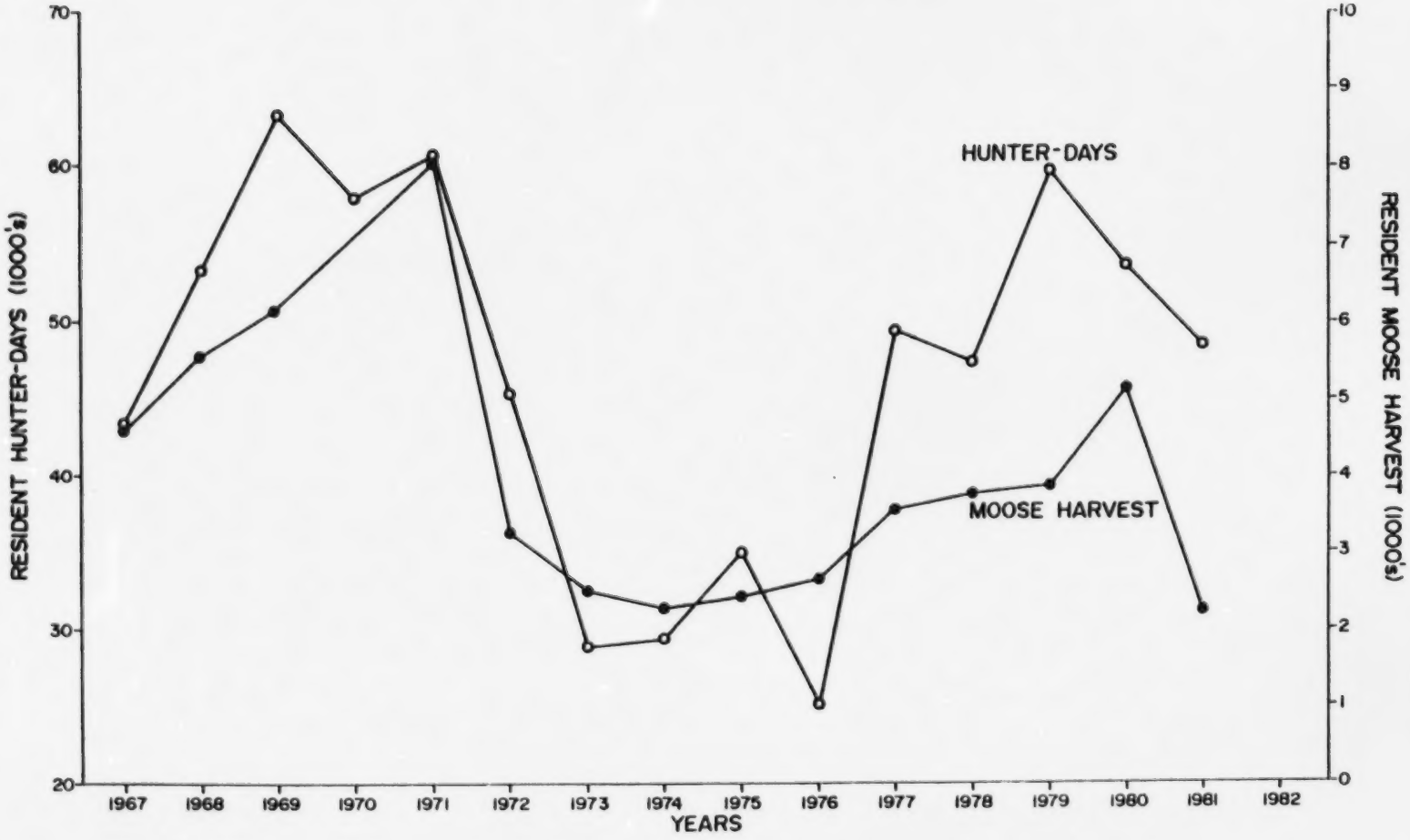


Figure 24.

Resident moose harvest and hunter-days recreation for the northern provincial forest zones of Saskatchewan, 1967-1981.

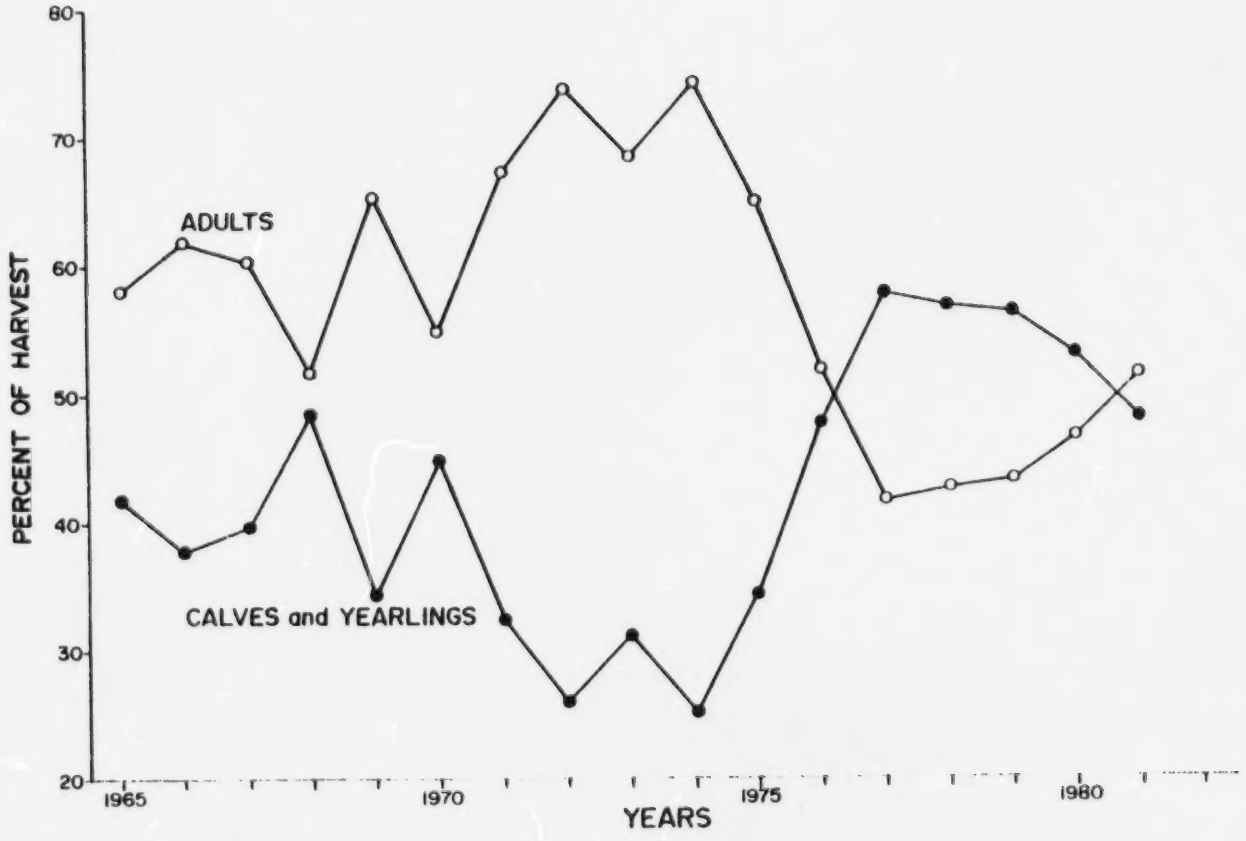


Figure 25.

Age structure of moose harvested in Saskatchewan, 1965-1981, as determined from checking station samples.

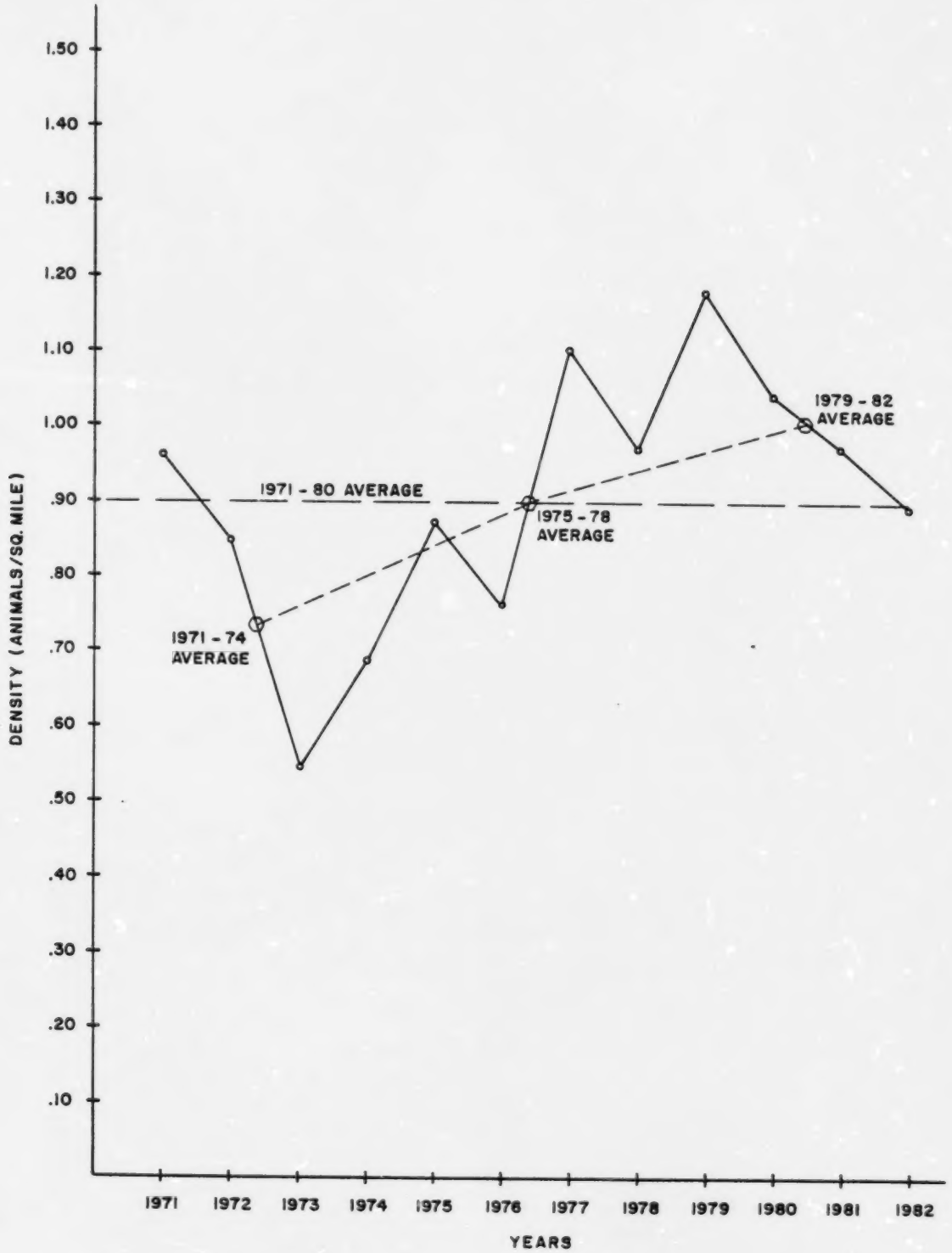
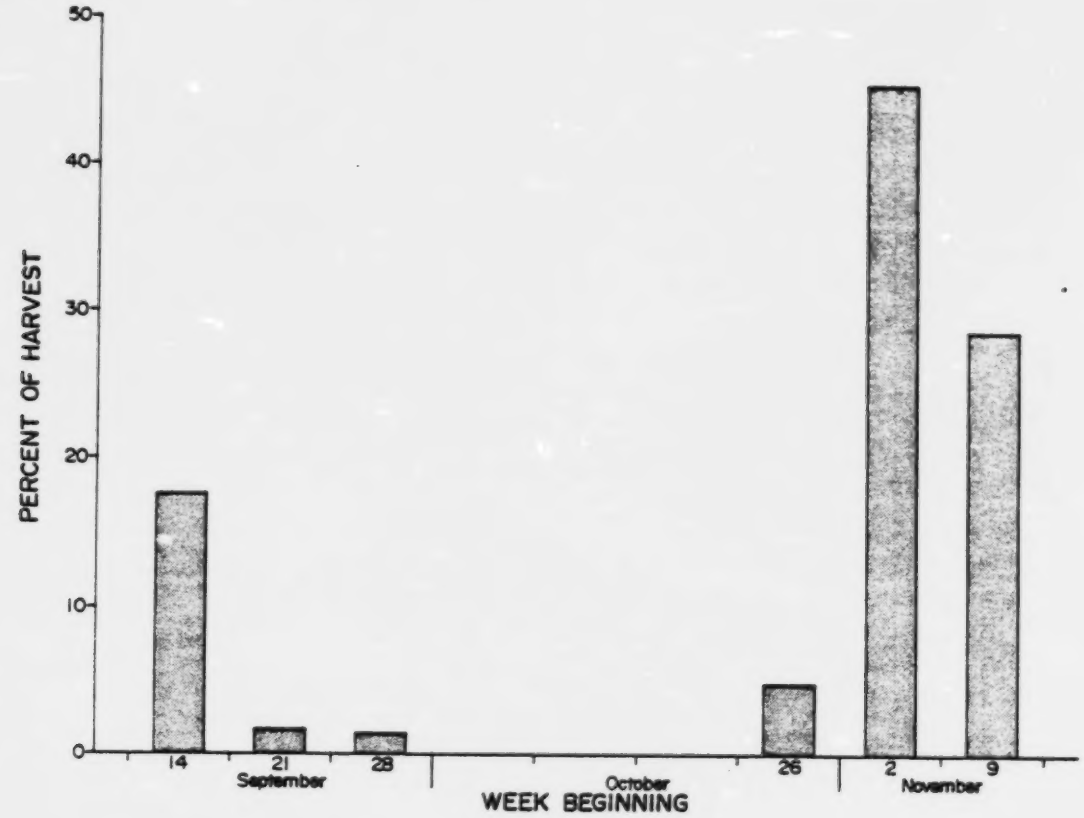


Figure 26.

PROVINCIAL MOOSE POPULATION DENSITY

Figure 27. Percent of Special Moose Harvest by Week, 1981



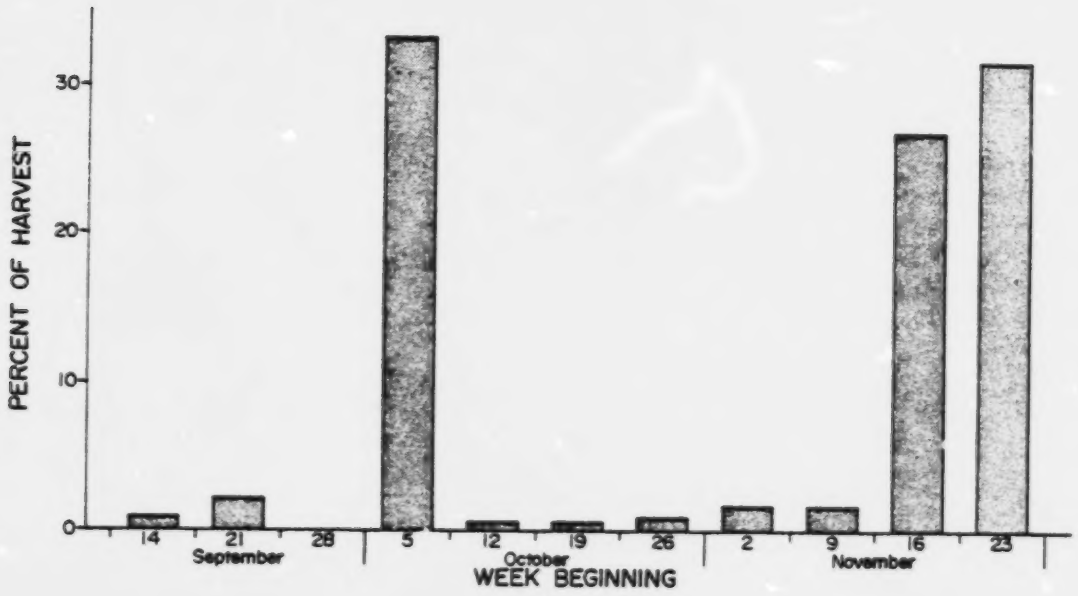


Figure 28. Percent of Regular Moose Harvest by Week, 1981

ELK

BULL SEASON — FOREST ZONES

Review of 1981 Season

A change was implemented in 1981 to let the mature bulls breed prior to the onset of hunting seasons. This meant delaying the opening on the bull season to the later part of September (September 20), the downward slide of the rutting cycle period.

There is growing conviction among elk managers in North America that holding bull seasons during the peak rutting period is interfering with elk breeding. The issue is whether or not there is enough surviving mature bulls after constant hunting pressure on them to keep elk reproduction in balance. Some concern has also been expressed that interference from hunting activity let along removing mature bulls from the population during the rutting season adversely affects elk reproduction.

Licence Sales

1976	1977	1978	1979	1980	1981
1,636	1,882	1,947	2,054	2,331	2,774

- Licence sales have increased 61 percent over a six year period.

Harvest

- The antlered season harvest dropped 21.7 percent from 1980 to 199 (Table 67).
- The main cause for the harvest decline was decrease in hunting success.
- Hunting activity increased 29.3 percent from 1980 to 7,526 days.
- Three factors may have contributed to the reduced hunting success and harvest:
  1. warm weather conditions/affected rutting behaviour;
  2. delayed hunting season/past peak rutting period;
  3. ATV regulation in Zones 23, 24 and 25.

- Zone 30 either sex season harvest was 52 animals compared to 62 in 1980. Warm weather and no snow may have influenced movement of animals from Prince Albert National Park into Cookson Wildlife Management Unit and surrounding area.

Population Status

1982 Winter survey in Porcupine Forest found good elk numbers and what appears to be expanding distribution of animals, particularly east of Highway No. 9.

Porcupine elk herd structure is in good shape; 17 bulls/100 cows and 48 calves/100 cows. Herd composition has remained unchanged since the last survey conducted in 1979 (Table 69).

Herd segregation survey in Squaw Rapids-Cumberland Delta area found 173 animals; 31 bulls/100 cows and 46 calves/100 cows. A good proportion of mature bulls were noted in the bull population segment; 17 mature vs 15 spikes.

Aerial surveys have not been conducted in other zones, but field reports indicate expanding population in Zone 28 (Smeaton-Candle Lake area).

Problems

Implemented ATV (All Terrain Vehicle) regulations in Game Management Zones 23 to 25 caused some concern that morning restriction contributed to some meat spoilage.

1982 Management Objective

1982 management format will maintain similar season timing as 1981. ATV regulation will not be in effect during the regular elk season which should eliminate game retrieval problem.

Season in Game Management Zone 30 will be delayed to accommodate landowners and hunters request.

PARKS AND WILDLIFE MANAGEMENT UNITS

Review of 1981 Season

Harvest

a) Cypress Hills (Zones 3 & 4)

- The estimated harvest from the hunter questionnaire survey was 122 animals, whereas 86 animals were reported at the checking station. Hunter success kill bias = $\frac{122}{86}$ = 1.42
- Reported Indian harvest was 16 animals.
- Alberta harvested 130 animals in the Cypress Hills Elkwater Park area.

b) Moose Mountain Park (Zone 16)

- Projected harvest from the hunter questionnaire was 69 animals. Telephone survey indicated 116 active hunters and 55 animals were harvested.
- Estimated Indian harvest was 30 animals.

c) Fort-a-la-Corne

- Estimated harvest based on hunter questionnaire returns was 59 animals.
- Hunter success was 24 percent.

d) Zone 23 (Porcupine Provincial Forest)

- Elk harvest was 74 animals compared to 66 in 1980.
- Hunter success was 31 percent.

Population Status

Cypress Hills (Game Management Zones 3 and 4)

- A co-operative survey to census elk on both the Alberta and Saskatchewan portions of the Cypress Hills have been carried out since 1978.
- Winter populations have declined from an estimated 869 in 1978 to 425 this year.

Moose Mountain Park (Game Management Zone 16)

- Over the past 15 years, a minimum of 400 to 500 elk were believed to inhabit the Moose Mountain uplands.
- A square kilometer quadrat census survey of Moose Mountain Park, January 1982, estimated the population at 512 ± 139 elk at 80 percent confidence level.

Fort-a-la-Corne

- A survey was not conducted this year, but the last survey conducted in 1980 produced minimum count of 275 animals.
- Although there is some concern about the elk population status in Fort-a-la-Corne, winter elk population is believed to be approximately 500 animals.

Game Management Zone 23 (Porcupine Provincial Forest)

- Elk census in the Porcupine Forest was designed to provide data on sex and production ratios and elk distribution and also to provide data on local population levels.
- All reas of known elk populations were searched.
- A total of 446 elk were observed during the 1982 January survey. This figure is the highest one ever obtained in the Porcupine Forest survey that was begun in 1974.
- The calf/cow ratio was 48/100, very comparable to past production ratios.
- Elk distribution appears to be expanding in the eastern sector of the Porcupine Forest (east of Highway #9).

1982 Management Objectives

Cypress Hills (Zones 3 and 4)

- Management of Cypress Hills elk population is quite complex as two provincial jurisdictions (Alberta and Saskatchewan) are managing the same population.
- Saskatchewan's management objective is to maintain approximately 1,000 elk which would be sufficient to provide sustainable hunting and good public viewing opportunities while Alberta's objective is to minimize elk damage by maintaining population at 700 animals.

- Alberta has maintained high licence quotas over the past four years to reduce the population.
- With 1982 winter survey count of 425 animals, this means the population is 39 percent below Alberta's objective and considerably down from Saskatchewan's goal of 1,000 animals.
- As the elk breeding stock is extremely low, Saskatchewan's 1982 management objective is hunting season closure.
- Efforts will continue to be made consulting Alberta on how to resolve management differences.

Moose Mountain Park (Game Management Zone 16)

- Primary objective is to maintain the approximately 500 elk located in the Moose Mountain uplands area.
- Current sport hunting pressure appears in balance with elk population.
- The 125 licence quota will be maintained.

Fort-a-la-Corne

- Maintain a population of approximately 500 animals.
- Retain 275 licence quota.

Game Management Zone 23 (Porcupine Forest)

- Maintain the 300 licence quota for 1982.

Appendix 18 gives the 1982 Parks and Wildlife Management Units elk hunting season regulations.

Table 67 REGULAR ELK SEASON HARVEST 1978-1981

Zone	Harvest				Percent Hunter Success			
	1978	1979	1980	1981	1978	1979	1980	1981
23	57	104	182	97	8.7	11.6	19.6	7.0
24	2	0	0	0	7.1	0.0	0.0	0.0
25	16	21	10	20	19.8	12.1	12.5	15.0
26	10	No Season	No Season	20	11.4	---	---	13.6
27	5	No Season	No Season	5	6.5	---	---	5.9
28	19	16	62	32	8.7	4.7	11.5	6.9
29	0	0	0	0	0.0	0.0	0.0	0.0
31	0	0	0	0	0.0	0.0	0.0	0.0
32	8	No Season	No Season	No Season	17.4	---	---	---
33	2	10	0	25	4.8	20.8	0.0	36.4
Total	119	151	254	199	8.4	7.3	14.5	8.5

Table 68. REGULAR ELK SEASON HUNTING PRESSURE 1978-1981

Zone	Hunter Days				Hunter Days/Sq. Mile Habitat				Hunter Days/Animal			
	1978	1979	1980	1981	1978	1979	1980	1981	1978	1979	1980	1981
23	3,000	3,287	3,261	4,530	1.32	1.44	1.42	1.97	52.6	31.6	17.9	46.7
24	116	133	139	51	.07	.08	.08	.03	58.0	0.0	0.0	0.0
25	261	532	160	365	.29	.59	.18	.41	16.3	25.3	16.0	18.25
26	265	---	---	367	.26	---	---	.36	26.5	---	---	18.35
27	284	---	---	275	.27	---	---	.26	56.8	---	---	55.0
28	1,002	1,381	1,764	1,653	.28	.39	.50	.47	52.7	86.3	28.4	51.65
29	25	40	9	0	.005	.008	.002	.00	0.0	0.0	0.0	0.0
31	88	133	236	94	.03	.04	.08	.03	0.0	0.0	0.0	0.0
32	169	---	---	---	.10	---	---		21.1	---	---	---
33	153	232	251	191	.06	.10	.11	.08	76.5	23.2	0.0	7.6
Total	5,363	5,738	5,820	7,526	.27	.35	.33	.48	33.5	48.2	22.9	37.8

Table 69. ELK HERD COMPOSITION SURVEYS

Zone	1982				1979			
	Cows	Calves	Spikes	Mature	Cows	Calves	Spikes	Mature
23	270	129	28	19	118	49	27	23
26 & 27	98	45	13	17				

Table 70. SPECIAL ELK SEASONS HARVEST 1979-1981

Zone	Harvest			Kill Per Sq. Mile			Hunter Success		
	1979	1980	1981	1979	1980	1981	1979	1980	1981
3 & 4 *	106	83	122	1.64	1.30		54.9	45.6	52.0
16	72	58	69	.47	.38		60.0	50.0	55.2
21	46	93	59	.12	.23		17.4	36.8	24.1
23	51	66	74	.01	.03		17.7	24.1	31.5
Total	275	300	324				31.8	39.1	37.8

HUNTER ACTIVITY

Zone	Hunter Days			Hunter Days/Sq. Mile			Hunter Days/Animal		
	1979	1980	1981	1979	1980	1981	1979	1980	1981
3 *	898	692	686	12.5	10.6	6.5	8.5	8.34	6.9
16	451	665	366	2.60	4.3	2.4	6.5	11.45	5.5
21	1,026	1,311	1,378	2.6	3.3	3.4	22.3	14.10	21.5
23	1,094	860	811	40.5	0.37	0.2	21.5	13.03	9.0
Total	3,469	3,528	3,241				12.6	11.76	10.1

* 1981 Zone 3 & 4 total.

Table 71. SEX COMPOSITION IN SPECIAL ELK HARVEST 1980-1981

Zone	Percent Bulls 1980	Percent Bulls 1981	Percent Cows 1980	Percent Cows 1981	Percent Calves 1980	Percent Calves 1981	Bull/Cow/Calf
3	27.8	28.7	55.6	53.0	16.7	18.1	54/100/34
16	40.9	24.3	50.0	59.4	9.1	16.2	41/100/27
21	60.0	40.6	25.0	43.7	15.0	15.6	93/100/36
23	55.6	30.0	33.3	57.5	11.1	12.5	52/100/22

MULE DEER

REVIEW OF 1981 SEASON

Licence Quota

1977	1978	1979	1980	1981
3,008	3,159	4,006	4,100	4,329

- Quotas have increased 43.9% over the five year period.
- 350 archery licences were allotted in 1981.

Harvest

- The mule deer harvest increased from 3,571 in 1980 to 3,662 (Table 72). Harvest rate approximates 11 percent of the estimated mule deer population.
- Hunting success was 88.1 percent compared to 91.1 percent recorded in 1980. Success has ranged between 85 and 91 percent over the past five years.
- Zone 5 recorded the highest success rate (90.9 percent).
- Archery mule deer harvest was 126 animals. Archers experienced overall success rate of 36 percent. Zone 5 archery had 57 percent success compared to 6 percent in Zones 1 to 4, 8 and 12.

Hunter Participation

- Approximately 7,211 recreation hunting days were recorded compared to 5,545 days in 1980 (Table 73).
- With upward swing in licences, approximately 51.6% more recreation days (2,454 days) have been provided since 1977.

Sex Composition in Harvest

- Bucks comprise approximately 71 percent of the reported harvest (Table 74).
- Lowest reported harvest of bucks occurred in Zone 1 (45.4%).
- Field checks in Zones 5 and 6 (A, B & C) indicated similar buck harvest proportion as the questionnaire survey. Approximately 72 percent recorded from Zone 5 sample and 73 percent from combined Zone 6 sample (Tables 75 and 76).

1982 WINTER POPULATION STATUS

- Major emphasis was placed on peripheral mule deer zones to obtain winter population base estimates.
- Table 77 provides winter counts obtained in Zones 8, 9, 12 to 15 and 22.
- Surveys showed surprisingly good distribution and numbers of mule deer in Zones 8, 12, 13 and 22.
- Good distribution of mulies were found in Zones 14 and 15 but overall number of animals counted was not high.
- Drainages south of Cypress Hills in Zone 3 revealed a good nucleus of mule deer and Tungstall-Bitter Lake mule deer population showed continued gain in numbers (Table 79).
- Mule deer numbers continue to remain high in the primary habitat areas in Zones 5 and 6 (Table 79).

1982 MANAGEMENT OBJECTIVES

- Adjust licence quota in Game Management Zones 2, 3 and 4 to sustain slightly higher mule deer harvest.
- Maintain closure on north portion of Game Management Zone 3 to to allow further population build-up.
- Split Game Management Zone 8 into two areas to achieve more harvest west of Highway No. 19 and close the area east of Highway No. 19 to allow population recovery from the severe 1981-82 winter conditions.
- Increase quota in Game Management Zone 12 to sustain a higher harvest.
- Sufficient mule deer numbers were noted in Game Management Zones 13 and 22 to open them for hunting in 1982.

Appendix 18 provides 1982 mule deer hunting season regulations.

Table 72. MULE DEER HARVEST 1978-1981

Zone	Harvest				Percent Hunter Success			
	1978	1979	1980	1981	1978	1979	1980	1981
1	36	38	40	36	75.9	75.0	83.3	75.0
2	387	491	530	590	82.2	84.4	92.6	87.1
3	230	332	264	252	80.8	85.3	92.3	87.8
4	124	166	185	198	87.9	85.4	94.4	82.8
5	802	1,157	1,152	1,223	84.9	91.8	93.0	90.9
6	857	1,169	1,294		90.9	92.7	90.5	
6A				935				88.2
6B				104				90.4
6C				177				90.3
8	78	81	76	119	82.0	82.5	80.0	83.2
12	34	35	30	28	72.3	73.1	62.5	57.1
	2,548	3,469	3,571	3,662	85.6	89.1	91.1	88.1

Table 73. MULE DEER HUNTING PRESSURE 1978-1981

Zone	Hunter Days				Hunter Days/Sq. Mile				Hunter Days/Animal			
	1978	1979	1980	1981	1978	1979	1980	1981	1978	1979	1980	1981
1	87	40	46	102	.08	.04	.04	.09	2.4	0.8	1.1	2.8
2	802	822	783	1,048	.37	.38	.37	.49	2.1	1.4	1.5	1.8
3	492	480	490	484	.13	.12	.13	.13	2.1	1.2	1.8	1.9
4	205	191	277	424	.22	.20	.29	.45	1.7	1.0	1.5	2.1
5	1,549	1,519	1,646	2,183	1.20	1.18	1.28	1.69	1.6	1.2	1.4	1.8
6	1,235	1,459	2,029		.72	.85	1.18		1.3	1.2	1.6	
6A				1,804				.32				1.9
6B				170				.70				1.6
6C				339				1.87				1.9
8	150	127	143	307	.09	.07	.08	.18	1.9	1.3	1.9	2.6
12	131	95	131	350	.08	.06	.08	.22	3.9	1.9	4.4	12.5
Total	4,651	4,733	5,545	7,211	.36	.36	.43	.61	1.8	1.2	1.6	2.0

Table 74. SEX COMPOSITION - MULE DEER HARVEST 1979-1981

Zone	Percent Bucks			Percent Does			Percent Fawns			Buck/Doe/Fawn
	1979	1980	1981	1979	1980	1981	1979	1980	1981	1981
1	58.3	55.5	45.4	41.7	44.4	27.2	0.0	0.0	27.2	166/100/100
2	58.3	73.3	75.6	33.8	23.9	20.3	7.9	2.8	3.9	371/100/19
3	54.9	68.9	64.5	29.0	21.7	28.4	16.1	9.4	6.9	227/100/24
4	72.0	78.9	75.1	23.0	19.7	21.7	4.9	1.5	3.1	346/100/14
5 1st Season	68.3	72.3	76.5	21.1	20.9	19.3	10.5	6.8	4.1	394/100/21
2nd Season	68.8	63.9	71.8	25.7	31.1	19.0	7.5	5.0	9.1	354/100/39
6 1st Season	68.4	65.4		24.7	26.8		6.9	7.8		
2nd Season	55.6	65.7		31.6	25.5		12.8	8.7		
3rd Season		59.7			31.8			8.5		
6A 1st Season			72.1			23.0			4.9	313/100/21
2nd Season			65.1			26.3			8.6	247/100/32
6B			64.1			31.7			4.2	215/100/20
6C			63.0			31.0			6.0	203/100/19
8	68.1	85.7	71.4	17.0	10.7	20.8	14.9	3.5	7.6	342/100/37
12	57.9	46.7	75.0	26.3	40.0	17.8	15.8	13.3	7.1	420/100/40
Total	62.8	66.9	71.3	27.8	26.9	22.7	9.5	6.1	5.9	314/100/26

Table 75. SEX COMPOSITION IN ZONE 5 MULE DEER HARVEST

as determined from field collection, 1981

ZONE	DATE	ADULT FEMALE	ADULT MALES					FAWNS		
			SPIKES	FORKS	3 PTS.	MATURE	TOTAL BUCKS	MALES	FEMALES	TOTAL FAWNS
5	Nov. 5	9	8	7	11	22	48	2	2	4
	Nov. 6	6	2	13	2	17	34	1	5	6
	Nov. 7	0	0	0	0	1	1	0	0	0
	1st Season	15	10	20	13	40	83	3	7	10
	Nov. 9	10	2	7	8	10	27	1	3	4
	Nov. 10	3	1	2	3	3	9	2	2	4
	Nov. 11	no samples								
	2nd Season	13	3	9	11	13	36	3	5	8
Seasons Combined		28	13	29	24	53	119	6	12	18

Table 76. SEX COMPOSITION IN ZONE 6A, 6B & 6C MULE DEER HARVEST

as determined from field collection, 1981

ZONE	DATE	ADULT FEMALES	ADULT MALES					FAWNS		
			SPIKES	FORKS	3 PTS.	MATURE	TOTAL BUCKS	MALES	FEMALES	TOTAL FAWNS
6A	Nov. 5	2	0	5	0	10	15	2	2	4
	Nov. 6	0	0	2	1	2	5	0	0	1
	Nov. 7	no samples								
	1st Season									
	Nov. 9	3	3	3	4	12	22	1	0	1
	Nov. 10	0	0	2	0	0	3	0	0	0
	Nov. 11	no samples								
	2nd Season	3	3	5	4	13	25	1	0	1
Seasons Combined		5	3	12	5	25	45	3	2	5
6B	Nov. 9	3	0	1	2	5	8	2	2	4
	Nov. 10	0	0	1	0	4	5	0	0	0
	Nov. 11	1	0	1	0	0	1	0	0	0
	Season (9-11)	4	0	3	2	9	14	2	2	4
6C	Nov. 9	0	0	1	0	1	2	1	1	2
	Nov. 10	0	1	0	0	1	2	0	0	0
	Nov. 11	3	3	0	0	0	3	0	1	1
	Season (9-11)	3	4	1	0	2	7	1	2	3

Table 77. WINTER MULE DEER COUNTS
IN G.M.Z.s 8, 9, 12 - 15 & 22, 1982

G.M.Z.	Number
8 (west side)	293
9	24
12	289
13	227
14	121
15	45
22	316
Total	1,291

Table 78. ZONE 3 WINTER MULE DEER COUNT 1982

DRAINAGE	SQ. MILES	1982	1971-76 AVE.	1976	1975	1974	1973	1972	1971
Box Elder	10	49	19	29	22	5	7	15	35
Gap	8	0	75	26	41	76	49	88	172
Battle R.	18	82	134	142	127	142	112	120	160
Middle	19	111	46	66	72	44	18	30	46
Lodge	6	115	51	59	64	40	36	72	32
Cypress	19	84	39	40	28	37	59	36	34
Woodpile	5	19	17	12	11	15	27	10	25
Lyons	8	23	4	0	0	0	19	2	0
Total	93	483	378	374	365	359	327	373	470
Density	--	5.2	4.1						

TUNGSTALL-BITTER LAKE AREA

Animals Observed = 45

Fawns	Does	Spikes	Fork Horns	Mature
19	18	2	3	3

Table 79. WINTER MULE DEER COUNTS IN ZONES 5 AND 6 1982

Zone	Fawns	Does	Spikes	F. Horns	Mature	Total
5	101	87	19	8	14	229
6	63	59	7	5	5	139

BLACK BEAR

REVIEW OF 1981 SEASON

Licence Sales

- With less reports of bear damage problems and sightings along the forest fringe area, bear licence sales dropped to 3,873 from 5,400 sales total in 1980.
- Second bear licences were 273 compared to 400 in 1980.

Harvest

- The provincial harvest was 929 animals compared to 1,374 recorded in 1980 (Table 80).
- Hunter success was 27 percent.
- The harvest reduction contributed to lower licence sales and also better berry crop which meant fewer bear showed up in the forest fringe areas.
- It also appears bear population could have been linked to females entering the winter in poor condition from drought conditions experienced in the north over the past two years. This factor probably accounted for poor reproduction.

1982 MANAGEMENT OBJECTIVE

Appendix 18 gives 1982 black bear hunting season regulation details.

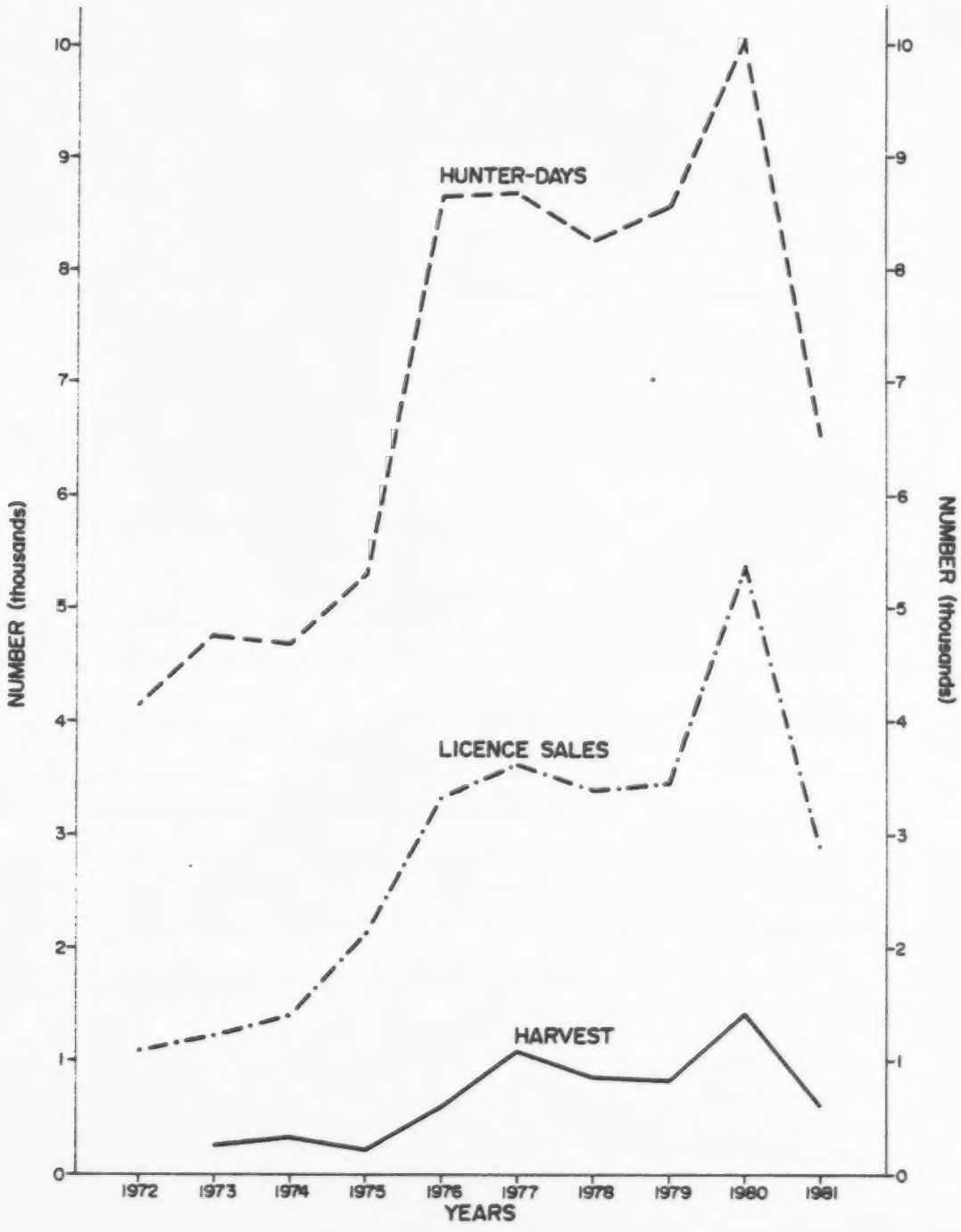


Figure 29. Bear Licence Sales, Harvest and Hunter-Days 1972-1981

Table 80 BLACK BEAR HARVEST 1979-1981

Zone	Harvest						Percent Hunter Success					
	1979		1980		1981		1979		1980		1981	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd
18	45	3	85	14	44	2	33.3	50.0	64.3	20.0	42.9	100.0
20	11	0	0	0	0	0	33.3	0.0	0.0	0.0	0.0	0.0
21	80	13	114	0	54	6	34.2	66.7	46.2	0.0	20.0	40.0
22	6	0	66	7	24	6	20.0	0.0	63.6	100.0	62.5	50.0
23	228	26	323	14	258	33	29.9	42.1	34.0	14.3	27.9	52.4
24	40	0	28	0	58	6	18.4	0.0	11.1	0.0	23.5	50.0
25	40	0	76	7	53	9	20.0	0.0	27.6	100.0	22.0	75.0
26	33	3	57	0	58	2	16.2	50.0	24.0	0.0	31.6	25.0
27	11	0	28	0	24	6	12.5	0.0	37.5	0.0	26.3	66.7
28	40	6	104	14	87	14	18.0	100.0	26.2	25.0	31.6	62.5
29	16	3	0	0	4	0	21.4	33.3	0.0	0.0	10.0	0.0
30	97	3	180	0	73	14	11.1	0.0	35.2	0.0	25.4	50.0
31	16	0	66	0	29	2	30.8	50.0	33.3	0.0	35.3	50.0
32	23	3	66	0	4	0	27.3	0.0	38.9	0.0	11.1	0.0
33	33	0	76	14	24	0	42.9	0.0	32.0	66.7	13.9	0.0
34	16	0	19	0	14	2	28.6	0.0	66.7	0.0	23.1	33.3
35	11	0	0	0	0	0	40.0	0.0	0.0	0.0	0.0	0.0
36	11	0	19	0	14	0	33.3	0.0	20.0	0.0	42.9	0.0
37	6	0	0	0	4	0			100.0	0.0	25.0	0.0
Total	763	60	1,307	70	826	102	25.6	33.9	30.8	18.5	27.1	53.4

Table 81 BLACK BEAR HUNTING PRESSURE 1978-1981

Zone	Hunter Days				Hunter Days/Sq. Mile				Hunter Days/Animal			
	1978	1979	1980	1981	1978	1979	1980	1981	1978	1979	1980	1981
18	121	385	232	297	1.30	2.85	2.30	2.94	3.5	8.6	2.72	6.8
20	33	31	14	46	.009	.009	.004	.01	8.3	2.8	0.0	0.0
21	692	741	671	858	1.73	1.84	1.67	2.13	7.5	9.3	5.9	35.8
22	13	31	127	58	---	.003	.01	.007	1.9	5.2	1.9	2.6
23	2,721	2,373	2,312	2,800	1.19	1.04	1.01	1.22	9.1	10.4	7.2	10.9
24	567	645	741	824	.36	.40	.43	.48	9.8	16.1	26.4	14.2
25	430	500	685	584	.48	.56	.76	.65	10.5	12.5	9.0	11.0
26	518	531	457	486	.50	.52	.46	.49	13.6	16.1	8.0	8.4
27	220	278	137	218	.21	.26	.12	.19	20.0	25.3	4.9	9.1
28	706	627	801	809	.20	.18	.23	.23	6.7	15.7	7.7	9.3
29	255	284	101	122	.05	.05	.02	.02	10.2	17.8	0.0	30.5
30	447	712	1,268	962	.23	.34	.60	.46	5.3	7.3	7.0	13.2
31	203	494	486	189	.06	.15	.14	.05	7.3	30.1	7.4	6.5
32	215	179	395	186	.12	.10	.22	.10	4.4	7.8	6.0	46.5
33	445	392	583	446	.19	.17	.25	.19	9.7	11.9	7.7	18.6
34	69	80	107	167	.003	.005	.006	.009	17.3	5.0	5.6	11.9
35	73	142	127	76	.02	.04	.03	.02	18.3	12.9	0.0	0.0
36	189	65	300	90	.008	.002	.01	.003	7.9	5.9	15.8	6.4
37	94	37	0	68	.002	.0006	---	.001	13.4	6.2	0.0	17.0
Total	8,011	8,527	9,544	9,286 (543)	.07	.07	.08	.08	8.3	11.2	7.8	11.2

( ) 2nd Licence Hunter Days

WOODLAND CARIBOU

REVIEW OF 1981 HUNTING SEASON

Licence Sales

- Licence sales have ranged between 200 - 280 over the past six years, but 1981 licence sales dropped to 161.

Harvest

- Projected harvest was 54 animals compared to 60 in 1980 (Table 82).
- Hunter success was 41.8 percent.

POPULATION STATUS

- Population status not known but field reports suggest limited harvest has no influence on populations.
- Major concern continues to be forest road access and potential destruction of caribou habitat by forestry cutting activities.

1982 MANAGEMENT OBJECTIVE

- Maintain same season format as 1981.
- Appendix 18 shows 1982 woodland caribou hunting season regulations.

Table 82. WOODLAND CARIBOU HARVEST 1978-1981

Zone	Harvest				Percent Hunter Success				Hunter Days			
	1978	1979	1980	1981	1978	1979	1980	1981	1978	1979	1980	1981
24	0	0	11	0	0.0	0.0	66.7	0.0	18	54	52	25
25	0	0	0	0	0.0	0.0	0.0	0.0	21	24	18	14
26	0	0	0	0	0.0	0.0	0.0	0.0	0	29	30	0
27	0	0	0	0	0.0	0.0	0.0	0.0	61	98	36	4
28	23	30	22	25	40.4	53.9	36.4	53.3	164	188	185	203
29	0	0	0	10	0.0	0.0	0.0	75.0	63	88	42	14
30	0	0	0	0	0.0	0.0	0.0	0.0	0	0	0	0
31	8	9	17	10	34.8	18.2	42.9	37.5	68	215	82	75
32	0	0	0	0	0.0	0.0	0.0	0.0	0	0	0	0
33	41	4	0	0	82.0	20.0	0.0	0.0	131	83	39	55
34	3	0	0	3	42.9	0.0	0.0	50.0	21	45	33	28
35	3	4	5	0	23.0	100.0	50.0	0.0	56	15	30	0
36	0	0	5	6	0.0	0.0	25.0	50.0	68	5	27	96
37	3	9	0	0	---	100.0	0.0	0.0	19	15	0	0
Total	81	56	60	54	37.5	27.2	27.5	41.8	700	861	582	514

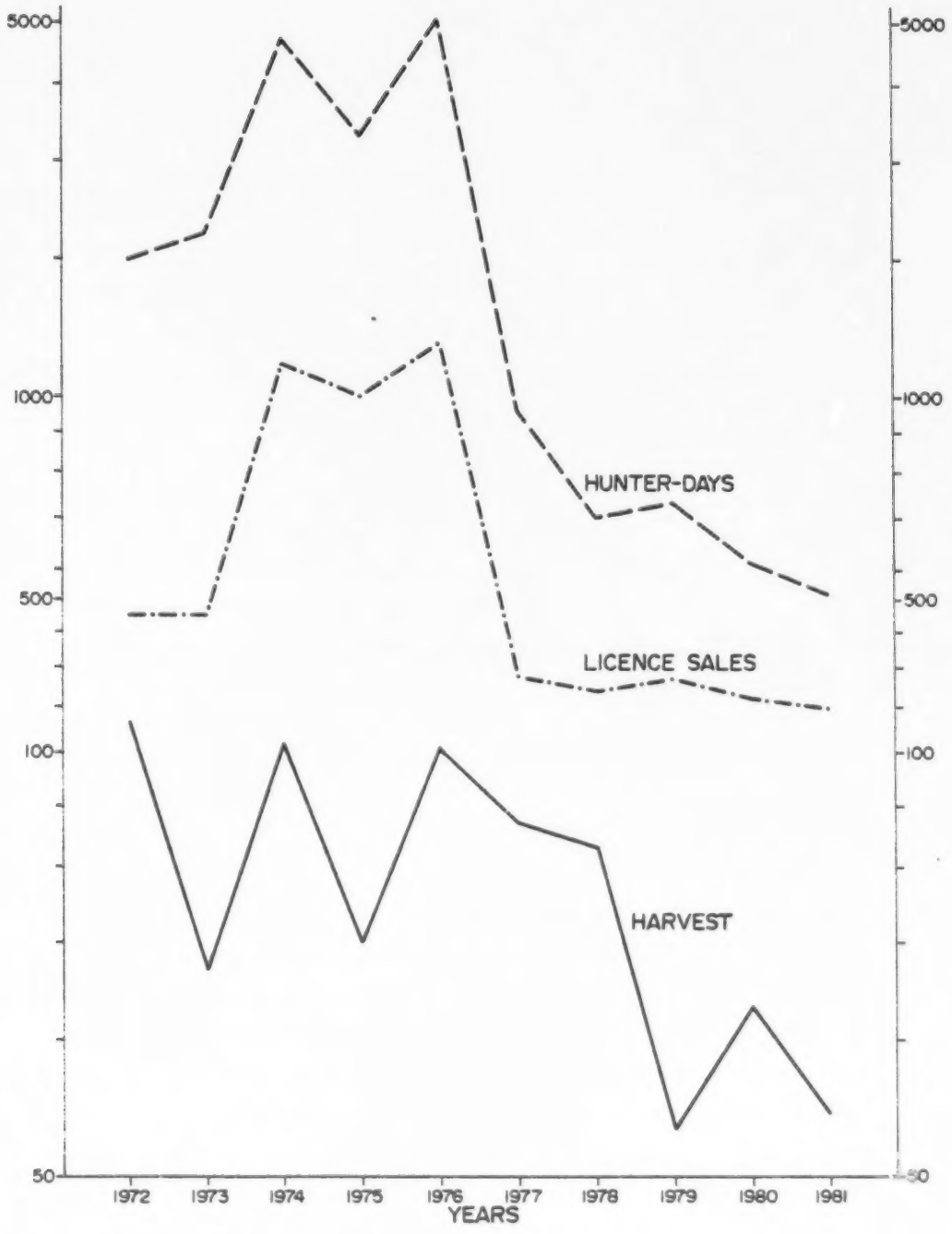


Figure 30. Woodland Caribou Licence Sales, Harvest and Hunter-Days, 1972-1981

ANTELOPE

REVIEW OF 1981 HUNTING SEASON

Harvest

- Projected antelope harvest of 1,856 compared to 1,650 in 1980 (Table 89).
- Hunters experienced improved success in harvesting an animal over the 1980 season when poor hunting conditions prevailed.
- Zone 1 had the highest success rate, 91.7 percent.
- With the increased quota, hunters spent about 200 more days afield than 1980 (Table 84).

POPULATION STATUS

- Winter surveys were not conducted to assess numbers and distribution of animals on their winter range but most populations went into the 1981-82 winter in good shape.
- 1981 summer survey noted population build-ups in the peripheral antelope range, particularly such areas as Game Management Zones 12 and 14.
- The 1982 July survey revealed 24.5 percent population increase from 1981 (Table 85).
- This year's population is approximately 9,000 animals compared to 7,000 in 1981 (Table 86).
- The 1982 population is very comparable to the high populations noted in the 1968-1971 period.
- Low numbers of animals were found in Game Management Zone 12. The eastern edge of the antelope range (Game Management Zone 7, east half of 8, 9 and 12) was hard hit by deep snow and cold temperatures during the 1981-82 winter. These conditions unquestionably took a heavy toll of the antelope herds.
- While high numbers of animals were evident in the primary antelope range, low kid:doe ratios were recorded (Table 87).

- This year's provincial kid:doe ratio was .51:1.00 compared to long term provincial average of .72:1.00.
- In the areas surveyed the kid:doe ratio ranged from .12:1.00 to .78:1.00.
- The low kid:doe ratio is attributed to late May snowstorm that hit the antelope range, particularly Cypress Hills region during the peak fawning period.
- Despite the low kid survival, it appears a high survival of last year's fawn crop occurred as large numbers of yearling bucks were noted on the survey. This factor would also depress the kid:doe ratio as a high proportion of the does would be yearling animals which would not have kids.

1982 MANAGEMENT OBJECTIVE

- Adjust the licence quotas to sustain slightly higher harvest on increased antelope populations, but maintain harvest rate below 30 percent of the population to protect breeding stock and stabilize provincial population at approximately 9,000 animals.
- Open Game Management Zone 14 but keep Game Management Zone 12 closed.
- Close east half of Game Management Zone 8.
- Season will open October 28 and close November 3 to accommodate livestock owners in removing their animals from the P.F.R.A. pastures.

LICENCE QUOTA SUMMARY

Zone	1981	1982
1	50	50
2	550	600
3	800	850
4	100	50
5	350	400
6	400	500
8	150	50
12	0	0
14	0	50
	2,400	2,550

Table 83. ANTELOPE HARVEST 1978-1981

Zone	Harvest				Percent Hunter Success			
	1978	1979	1980	1981	1978	1979	1980	1981
1	84	93	37	44	72.9	80.0	75.0	91.7
2	351	422	302	435	89.8	89.1	64.1	85.2
3	256	363	485	619	79.4	86.6	85.8	83.3
4	106	60	107	82	92.4	78.4	75.6	88.1
5	295	435	390	259	85.5	90.5	82.8	79.3
6	172	252	297	330	93.1	89.7	89.8	88.9
8	81	98	32	89	87.5	89.6	68.8	64.0
Total	1,345	1,723	1,650	1,856	85.9	87.2	79.0	83.1

Table 84. ANTELOPE HUNTING PRESSURE 1978-1981

Zone	Hunter Days				Hunter Days/Sq. Mile				Hunter Days/Animal			
	1978	1979	1980	1981	1978	1979	1980	1981	1978	1979	1980	1981
1	193	116	81	72	.17	.10	.07	.06	2.30	1.2	2.2	1.6
2	554	582	896	881	.23	.24	36	.36	1.58	1.4	3.0	2.0
3	474	464	807	1,201	.22	.22	.38	.56	1.85	1.3	1.7	1.9
4	160	113	235	161	.17	.12	.25	.17	1.51	1.9	2.2	2.0
5	569	595	988	628	.44	.46	.77	.48	1.93	1.4	2.5	2.4
6	238	314	427	590	.14	.18	.25	.33	1.38	1.2	1.4	1.8
8	115	107	81	220	.07	.06	.05	.13	1.42	1.1	2.5	2.5
Total	2,303	2,291	3,515	3,753	.20	.20	.30	.33	1.71	1.3	2.1	2.0

Table 85. 1982 ANTELOPE SURVEY RESULTS

Zone	Yearling Bucks 1981	Yearling Bucks 1982	Bucks 1981	Bucks 1982	Does 1981	Does 1982	Kids 1981	Kids 1982	Total 1981	Total 1982	Density 1981	Density 1982
1	3	2	7	17	24	21	17	16	51	56	0.39	0.42
2	59	28	131	129	324	533	203	264	717	987	0.93	1.29
3	74	125	146	148	463	587	328	298	1011	1158	1.05	1.20
4	3	20	17	24	79	86	42	10	141	140	0.60	0.59
5	13	45	33	71	161	280	140	140	391	537	0.67	0.84
6	2	25	26	25	109	156	67	120	204	326	0.60	0.96
12	3	1	8	6	39	18	22	14	72	39	0.28	0.21
14	3	5	10	9	40	40	22	19	75	73	0.52	0.51
Total	160	251	378	429	1239	1721	841	881	2662	3316	0.63	0.75

Table 86. PROVINCIAL ANTELOPE POPULATION ESTIMATES

Zone	1980	1981	1982
1	93	116	127
2	1,532	1,680	2,313
3	1,882	2,623	3,000
4	470	298	296
5	1,430	1,051	1,422
6	666	723	1,156
8	-	-	-
12	-	142	89
14	110	156	152
Total	6,183	6,789	8,555

Table 87. 1982 KID:DOE RATIOS

Zone	1981	1982
1	.71:1.0	.76:1.0
2	.63:1.0	.46:1.0
3	.71:1.0	.51:1.0
4	.53:1.0	.12:1.0
5	.86:1.0	.50:1.0
6	.61:1.0	.76:1.0
12	.56:1.0	.77:1.0
14	.80:1.0	.48:1.0
Average	.69:1.0	.51:1

Provincial Kid:Doe Ratio 1965 - 1982

1965	1966	1967	1968	1969	1970	1971	1972	1973	1974
.54:1	.85:1	.82:1	.74:1	.87:1	.77:1	.70:1	.60:1	.68:1	.56:1

1976	1976	1977	1978	1979	1980	1981	1982
.64:1	.81:1	.65:1	.74:1	.90:1	.68:1	.69:1	.51:1

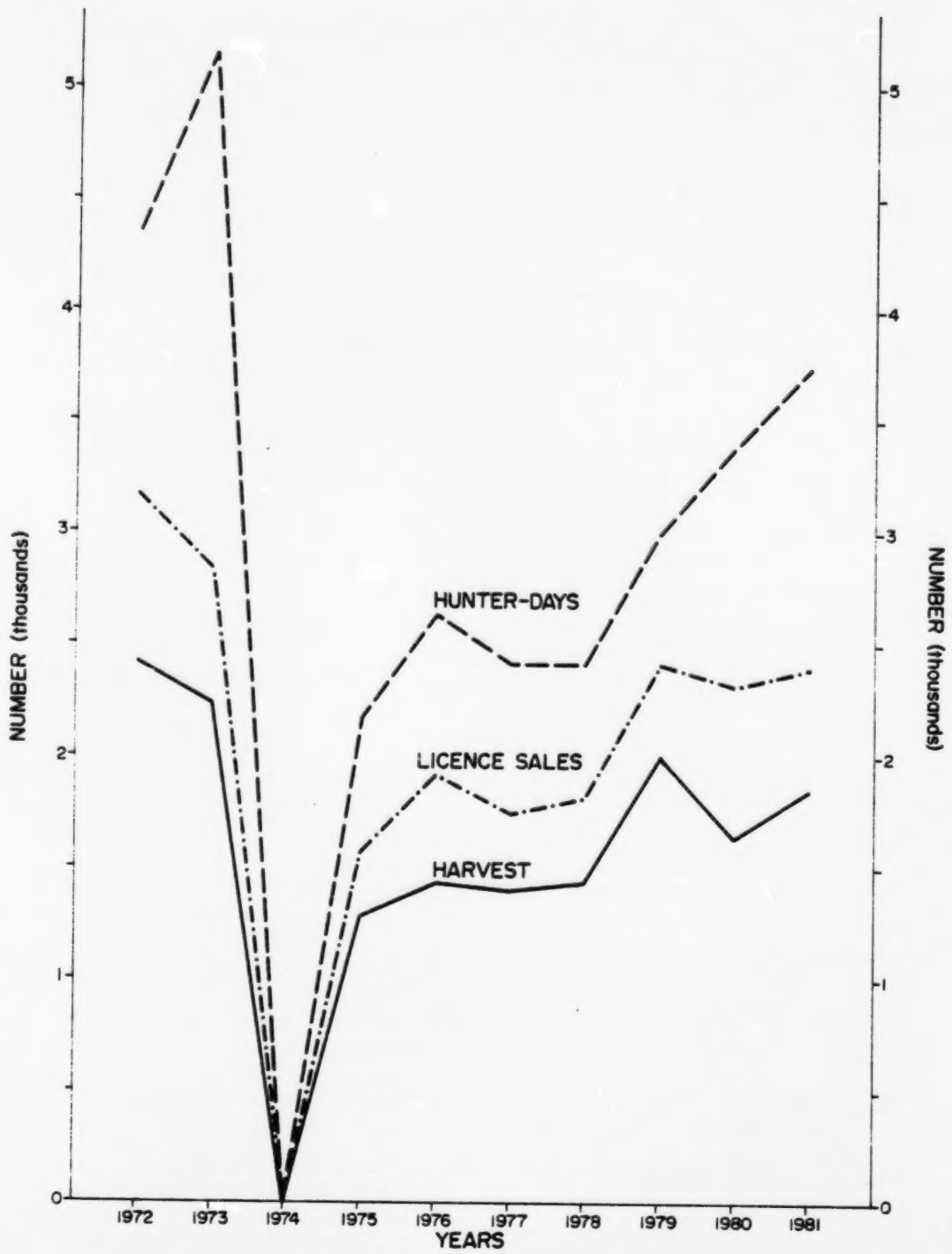


Figure 31. Antelope Licence Sales, Harvest and Hunter-Days, 1972-1981

ARCHERY SEASONS

REVIEW OF 1981 SEASON

White-tailed Deer

- Approximately 1,300 licences were sold in 1981.
- Archers experienced comparable success rate to 1980 season, 9 percent.
- Most of the hunting activity occurred in Zones 5 to 9, 12 and 13.
- Estimated harvest was 116 animals.

Mule Deer

- 350 licences were allotted in 1981.
- Archers experienced overall success rate of 36 percent. Zone 5 archers had 57 percent success compared to 6 percent success in Zones 1 to 4, 8 and 12.
- Estimated mule deer harvest was 126 animals.

Antelope

- 150 licences were issued.
- Archer success was 18.8 percent compared to 13 percent in 1980.
- Estimated harvest was 28 animals.

1982 MANAGEMENT OBJECTIVES

White-tailed Deer

- Expand Regina and Saskatoon archery-slug zones to include additional densely populated rural area.
- Adjust season changes and bag limits same as rifle season.

Mule Deer

- With continued expansion of mule deer populations in the Grassland zones and build-up in some of the Farmland zones, propose to increase the licence quota from 350 licences to 600 licences, however, quota will be allocated on a zone basis.

Antelope

- Adjust quota to 200 licences to provide slightly more recreation on higher antelope population.

Moose

- Archers have made several repeated requests for special archery moose season.
- In considering their request, and reviewing areas where season of this type could be held, an archery season will be held in Game Management Zone 32. This zone has good moose numbers and provides a good distribution of lakes, open meadows and bog areas to provide some opportunity for archers to harvest a few animals.

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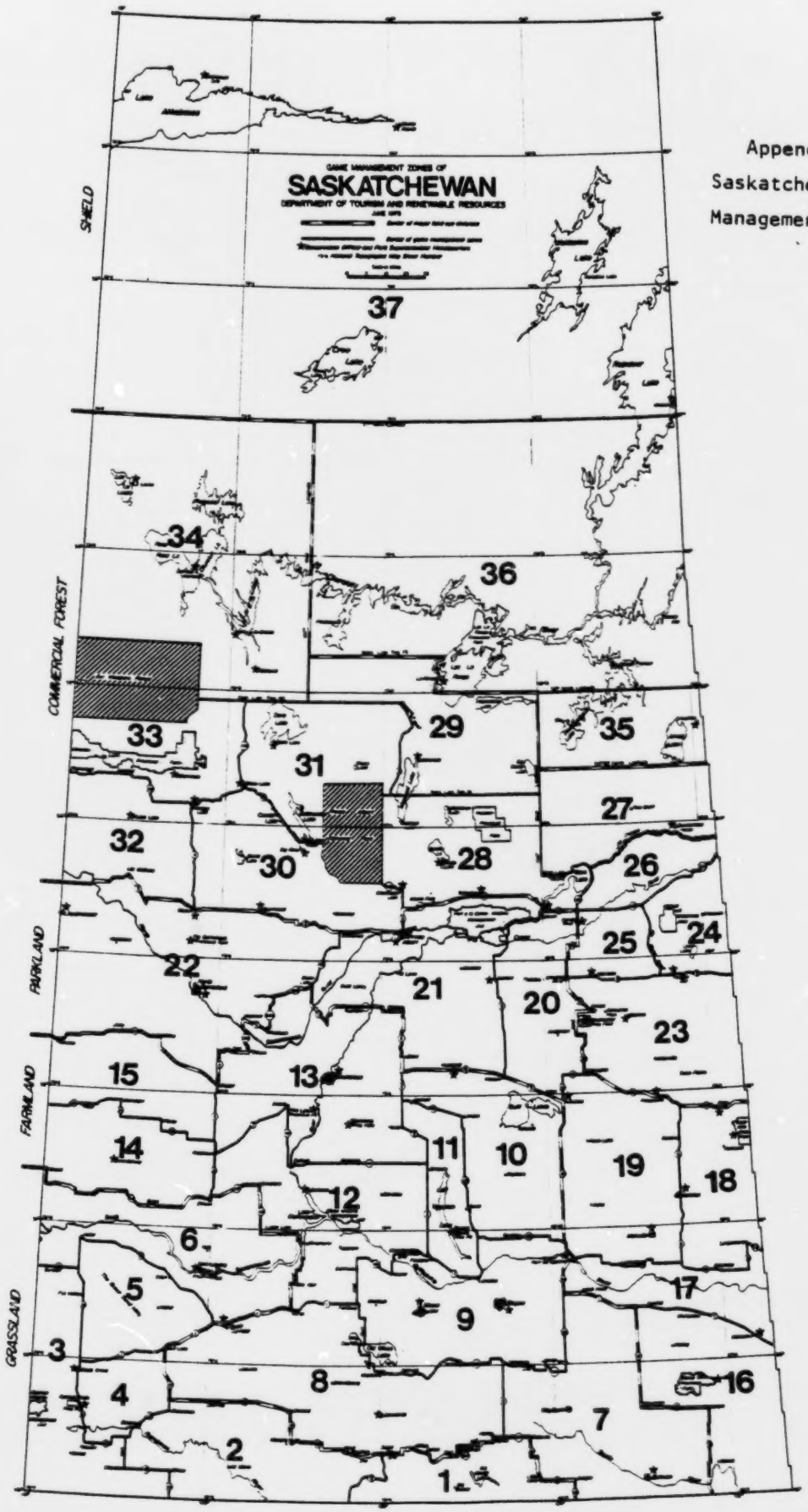
APPENDICES

Appendix I
Saskatchewan Game
Management Zones, 1981



Saskatchewan Tourism and Renewable Resources

Wildlife Bulletin

81-W-9

July 9, 1981.

1981 GAME BIRD SEASONS

The tentative 1981 Game Bird Seasons are as outlined below. Important changes for this year are:

1. A late pheasant season has been offered in Zones 1 to 5 and 8. Good pheasant populations are reported in these areas following the recent mild winters. Also, recent post season, hen to cock ratio counts are 2:1 or less. Therefore, more cocks can be taken to reach the desired ratio of about 7:1 hens to cocks.

2. Estevan-Cambria and Lomond #3 (at Maxim) Wildlife Management Units are open for game bird hunting at a delayed October 7 date. These pastures have been open for big game in the past but not game bird. Good sharp-tailed grouse populations are present in these two areas.

3. Leaf Lake and Manito Lake, 500 meter restrictions have been removed. Leaf Lake is now a Wildlife Management Unit no longer requiring the restriction with Manito a large lake not heavily used by staging waterfowl, thus, the restriction was of little use.

4. The delayed opening for non-residents is September 30, in the southern Zones 1 to 25 and 28. This restriction applies to all game bird species except ducks. Non-residents can not hunt upland birds in Zones 6, 14 and 15. They may hunt sharp-tailed grouse but no other upland bird in Zone 5.

5. Canadian residents have the September 30, delayed opening in Zones 1 to 25 and 28 for geese only. They may hunt all other species at the regular opening date. Canadian residents may hunt upland birds in all Zones.

for R.R. MacLennan
Director

1981 GAME BIRD SEASONS

UPLAND GAME BIRDS

Species	Game Management Zones Open	Season Dates	Limits
Sharp-tailed Grouse	Zones 1 to 33 including Meadow Lake and Nipawin Provincial Parks and Last Mountain Lake; Fort-a-la-Corne and Porcupine Wildlife Management Units.	Sept. 21 - Nov. 14	5 daily, 10 possession
	Zones 34 to 37 including Lac la Ronge Provincial Park.	Aug. 31 - Dec. 5	5 daily, 10 possession
	Moose Mountain Park Only.	Sept. 21 - Oct. 24	5 daily, 10 possession
	Elbow, Estevan-Cambria and Lomond #3 (at Maxim) Wildlife Management Units only. Note: Hunting is not permitted in portions of the pastures containing cattle.	Oct. 7 - Nov. 14	5 daily, 10 possession
Hungarian Partridge	Zones 1 to 16 including Last Mountain Lake Wildlife Management Unit.	Sept. 21 - Nov. 14	6 daily, 12 possession
	Zones 17 to 22	Sept. 21 - Nov. 14	3 daily, 6 possession
	Elbow, Estevan-Cambria and Lomond #3 (at Maxim) Wildlife Management Units only. Note: Hunting is not permitted in portions of the pastures containing cattle.	Oct. 7 - Nov. 14	6 daily, 12 possession
Ruffed Grouse	Zones 1 to 22 including Last Mountain Lake and Fort-a-la-Corne Wildlife Management Units.	Sept. 21 - Nov. 14	5 daily, 10 possession
	Zones 23 to 37 including Meadow Lake, Nipawin and Lac la Ronge Provincial Parks and Pasquia and Porcupine.	Aug. 31 - Dec. 5	5 daily, 10 possession
	Elbow Wildlife Management Unit only. Note: Hunting is not permitted in portions of the pasture containing cattle.	Oct. 7 - Nov. 14	5 daily, 10 possession

Spruce Grouse	Zones 18, 20 and 21 including Fort-a-la-Corne Wildlife Management Unit.	Sept. 21 - Nov. 14	5 daily, 10 possession
	Zones 23 to 37 including Meadow Lake, Nipawin and Lac la Ronge Provincial Parks and Pasquia and Porcupine Wildlife Management Units.	Aug. 31 - Dec. 5	5 daily, 10 possession
Ptarmigan	Zones 27 to 37 including Meadow Lake, Nipawin and Lac la Ronge Provincial Parks.	Aug. 31 - Jan. 30/82	10 daily, 20 possession
Pheasant (Cocks Only)	Zones 1 to 17 including Last Mountain Lake, Elbow, Estevan-Cambria and Lomond #3 (at Maxim) Wildlife Management Units. Note: Hunting is not permitted in portions of P.F.R.A. and Provincial Community Pastures containing cattle.	Oct. 7 - Nov. 14	5 daily, 10 possession
	Zones 1 to 5 and 8	Nov. 30 - Dec. 12	5 daily, 10 possession
	Zone 6	Nov. 30- Jan. 3/82	5 daily, 10 possession

WATERFOWL

Species	Game Management Zones Open	Season Dates	Limits
Ducks	Zones 23 to 37 including Meadow Lake, Nipawin and Lac la Ronge Provincial Parks and Pasquia and Porcupine Wildlife Management Units.	Sept. 1 - Dec. 5	8 daily, 16 possession
	Zones 1 to 22 including Elbow Wildlife Management Unit; and Last Mountain Lake Wildlife Management on and after Sept. 16.	Sept. 7 - Dec. 12	8 daily, 16 possession

Coots & Wilson's Snipe	Zones 23 to 37 including Meadow Lake, Nipawin and Lac la Ronge Provincial Parks and Pasquia and Porcupine Wildlife Management Units.	Sept. 1 - Dec. 5	10 daily, 20 possession
	Zones 1 to 22 including Elbow Wildlife Management Unit; and Last Mountain Lake Wildlife Management Unit on and after Sept. 16.	Sept. 7 - Dec. 12	10 daily, 20 possession
Sandhill Cranes	Zones 10 to 13 and 19 to 21	Sept. 1 - Sept. 5	4 daily, 8 possession
	Zone 6	Sept. 14 - Sept. 19	4 daily, 8 possession
Geese	Zones 23 to 37 including Meadow Lake, Nipawin and Lac la Ronge Provincial Parks and Pasquia and Porcupine Wildlife Management Units.	Sept. 1 - Dec. 5	5 daily (3 only may be white-fronted geese) 10 possession (6 only may be white-fronted geese)
	Zones 7, 10, 11 and 16 to 22 including Elbow and Last Mountain Lake Wildlife Management Units.	Sept. 16 - Dec. 12	5 daily (3 only may be white-fronted geese) 10 possession (6 only may be white-fronted geese)
	Zones 1 to 6, 8, 9 and 12 to 15.	Sept. 23 - Dec. 12	5 daily (2 only may be white-fronted geese) 10 possession (4 only may be white-fronted geese)
	NOTE: On and after October 15.	In addition to the above geese limits 3 additional snow or Ross' geese may be taken daily in all open Game Management Zones. 6 additional snow or Ross' geese may be in possession.	

Morning hunting of Geese only:

September 1 to October 20, 1981 inclusive in Game Management Zones 1 to 25, 28, 30 and 32, any open season for geese shall include only that part of each day from one-half hour before sunrise to 12:00 o'clock noon, Central Standard Time.

A Message from the Director of Wildlife

Fellow Sportsman:

You are one of a group of Saskatchewan game bird hunters selected to receive the 1981 Game Bird Hunter Survey. Please complete this questionnaire and return it in the enclosed, postage paid envelope when you have finished hunting birds this year. If you don't buy a licence this fall, or if you buy a licence but don't get out to hunt, please indicate this and return the questionnaire anyway. All information is essential for a good survey.

I would like to assure you that this survey is important. It forms the backbone of game bird management in Saskatchewan. The hunting information you provide is used in conjunction with information on population densities and reproduction, along with other data, to determine season dates and bag limits.

You may wonder "O.K., but why do I seem to get one of these things every year?"

First of all, we have to do the Bird Hunter Survey annually because hunting success and bird populations can change a lot from year to year. Not only can extreme weather have an impact on game bird nesting success and winter survival — it and other factors can strongly influence hunter activity and the bird harvest. Responsible game management requires the monitoring of each hunting season.

Secondly, it is essential for statistical accuracy to randomly select each year the recipients of the survey. This is done by computer, based on last year's licence sales. Because many hunters fail to return this form, about one-third of all game bird hunters must be sent a questionnaire. Therefore, it is possible, but not very probable, to be surveyed two or more years in a row. If the return rate improves, we will be able to get the information we need by contacting fewer hunters. This would reduce Department costs and your inconvenience.

We have improved the design of the Game Bird Hunter Survey this year, and mailed it early, to make it easier for you to complete. A section for your comments has been provided.

We realize that you may be interested in the information collected last year. A summary is provided on the last page of this form.

Your help in filling out the Game Bird Hunter Survey is appreciated. Good game bird management and hunting are goals that we can achieve together.

Yours sincerely,

Ross MacLennan

R. R. MacLennan
Director
Wildlife Branch

1981 Saskatchewan Game Bird Hunter Survey

1. If you **did not** purchase a 1981 Saskatchewan Game Bird Licence please check ☑ here ☐ and return immediately, thank you.

2. If you **did** purchase a 1981 Saskatchewan Game Bird Licence please fill out the following questionnaire, and return it as soon as possible upon completion of your hunting.

3. Check ☑ each license you purchased in 1981
Game Bird Licence ☐ Migratory Game Bird Permit ☐ Pheasant Licence ☐

4. Check ☑ each game bird you hunted in 1981
Sharp-tailed grouse ☐ Hungarian Partridge ☐ Ruffed grouse ☐ Spruce grouse ☐ Pheasant ☐
Ducks ☐ Geese ☐ Sandhill cranes ☐

5. **Please record all your hunting activities, whether or not you bagged any birds.**
   - Use a separate line for each date you hunted; if you hunted in more than one game management zone on a given date, use a separate line for each zone.
   - Use the following guide for recording the amount of time you hunted.
     (4 or more hours = 1 day less than 4 hours = ½ day)
   - Check ☑ Upland Birds or Migratory Birds, or both, depending on what you hunted in each time period recorded.
   - Record the number of birds you bagged.
   - Check ☑ any species you hunted but did not bag.

(See Examples)

Date	GM Zone No.	Time Hunted		Upland Birds	Migratory Birds	Upland Birds					Migratory Birds						
											Ducks		Geese				
		1 Day	½ Day			Sharp-Tailed Grouse	Hungarian Partridge	Ruffed Grouse	Spruce Grouse	Pheasant	Mallards	Others	Canadas	White-Fronts	Snows & (Blues)	Ross's	Sandhill Cranes
Examples																	
Oct. 24	8		✓	✓		✓	2			2							
Oct. 24	9		✓	✓	✓	1	✓				3						
Nov. 3	22		✓	✓				✓									
Nov. 5	22	✓		✓	✓	2		1			2	✓	1	1			

Hunter Comments?

Saskatchewan

Saskatchewan
Tourism and
Renewable Resources

3211 Albert Street
Regina, Canada
S4S 5W6

Refer to File _____

November 23, 1981

Dear Sportsman:

Approximately two months ago a questionnaire was mailed to you asking that you report your game bird hunting activities in Saskatchewan during the 1981 season. To date, we have not received your reply.

If you have already completed and mailed the original questionnaire, please disregard this notice.

If, however, you have not returned your hunting information, please complete and return the enclosed questionnaire as soon as possible in the self addressed, postage paid envelope.

By filling out the Game Bird Hunter Survey, you will be providing the Wildlife Branch with essential information on the hunting season which can't be obtained without your assistance.

We trust that you will take this opportunity to make an important contribution to wildlife management in Saskatchewan.

Yours sincerely,

Ross MacLennan

Ross MacLennan
Director
Wildlife Branch

RM/sdc
Encl.

Appendix 4 1981 Saskatchewan Hunter Surveys Follow-up Letter

Appendix 5 Saskatchewan Upland Game Bird Spring Survey Procedures, 1982

Appendix 5a:

SASK. SHARP-TAILED GROUSE SPRING SURVEY

Introduction

The goal in each sharp-tailed grouse survey area is to locate all the dancing grounds present and accurately assess the number of male sharptails present on each ground. When this is achieved, the resultant density of males provides an index to the total size of the sharp-tailed grouse population and satisfies the above functions of the survey. Males are focused on because females do not consistently appear on dancing grounds. If the number of dancing ground males is not accurately assessed, due either to a failure to locate all the dancing grounds and/or to accurately count the known grounds, the survey information is of little value.

Methods

1. (a) Surveys should be conducted between April 15 and May 15. Generally activity is at peak in mid-late April, depending on the area of the province.

   (b) The surveys should be conducted between day break (ie. one half hour before sunrise) and 8:00 a.m. Various situations can cause grouse to stop dancing momentarily but they will recume dancing within a few minutes. For this reason be sure to allow ample listening time (2 to 3 minutes) to ensure that you do not miss any dancing activity. Note: Turn your vehicle off and step away from it to listen so that the noises of the motor cooling will not hamper your hearing.

   (c) Proceed to each of the listening stops in turn and use the same method as above to locate dancing grounds. Only survey until 8:00 a.m. because activity is reduced or stops completely later in the morning. Additional mornings may be required to find and count all grounds.

   (d) If dancing grounds are located farther than one-half mile from the survey block, please indicate so we can determine the birds per square mile density for your block.

2. All dancing grounds must be systematically, counted recording the number of males and females as well as a flush count. The following procedures should be used:

   (a) Accurate counts can be taken by watching the dancing birds for ten minutes after arrival of the observer or if the birds flush, for 5 to 10 minutes after they return and set up territories.

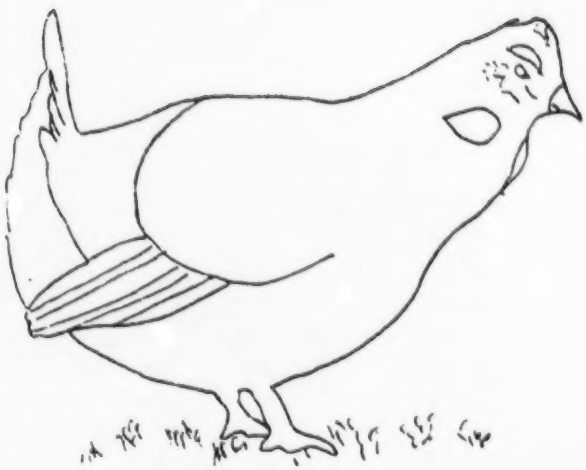
   (b) Sharptails can be sexed easily during periods of dancing activity. The presence of females initiates dancing activity, although males do dance in their absence. If the birds don't dance at least every five minutes, there are no females present. A diagram is enclosed which shows typical dancing ground postures of males and females when both are on the dancing ground.

   (c) At least, two or more visits should be made to each dancing ground on different mornings. Counts are also possible in the evening during the peak activity period.

   (d) Be sure to fill out all the sections of the field sheet each time a count is made. Be sure to indicate any recent changes in habitat. DO NOT SEND AN AVERAGE OR RESUME, SEND ALL DATA INCLUDING ALL OBSERVATIONS MADE. Invariably some data are lost when all census information is not sent.

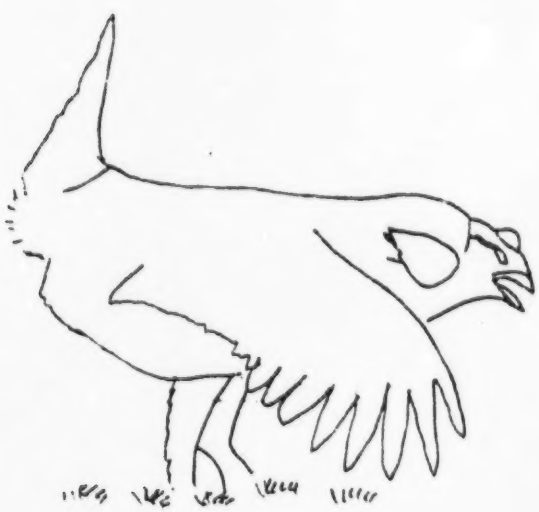
3. The survey results must be received by Fisheries and Wildlife Branch, Regina, by May 20 in order to be used in establishing regulations for the coming year. Wildlife Management Division season proposals have to be prepared by June 1 in order to provide sufficient time for Department and Game Advisory Committee review, and the subsequent government decision making process.

4. Questions concerning Sharp-tailed grouse surveying should be directed to Denis Mevel or Syd Barber.

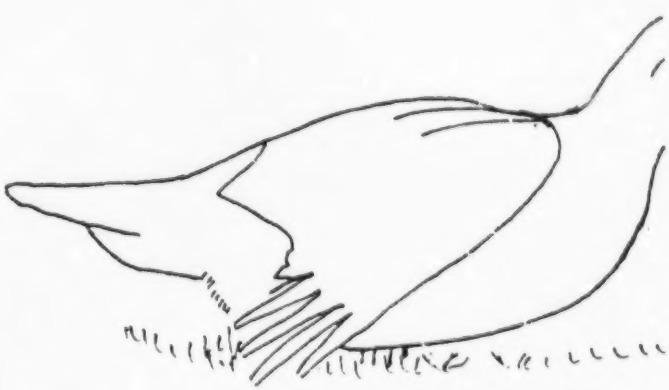


Male during hooting display; tail held upright, purple air sacs and yellow comb visible ruffled appearance.

Female posture around dancing ground; tail down, smooth sleek appearance.



Male during tail rattling and dancing display; tail held upright, air sacs and comb very prominent, actively dancing.



Precopulatory position of female on dancing ground; tail down, no air sacs or comb visible; position held only momentarily.

Appendix 5b:

SASKATCHEWAN HUNGARIAN PARTRIDGE SPRING SURVEY

INTRODUCTION

The Hungarian partridge is an important Saskatchewan game bird and also provides much non-consumptive recreation. It occurs throughout the agricultural portion of the province, but its primary range is the Grassland and Farmland game management divisions. Populations can be affected by severe weather, particularily in winter, habitat loss and hunting pressure, giving value to an extensive survey.

The simple survey method outlined below involved abandoned farmsteads because they constitute the most readily identified Hungarian partridge habitat. Abandoned farmstead surveys were tried successfully by the Wildlife Branch in 1979.

METHODS

(1) The survey should be conducted between April 15 and May 15, but preferably in the first half of this period of average springs.

(2) Survey 10 - 15 abandoned farmsteads selected more or less at random from at least two areas within the district. Approximately 75% of the farmsteads should be good Hungarian partridge habitat, as determined by the amount and complexity of woody and herbaceous cover offered.

(3) Thoroughly search each farmstead on foot during mid-day to locate breeding pairs or other partridge present. Surveys should be conducted between 10:00 a.m. and 3:00 p.m., preferably on sunny days with light winds. Don't survey when winds are strong (i.e., 30 to 40 k.p.h. or stronger). Birds may not flush under these conditions or they may flush without being heard.

(4) Walk both sides of all hedges and shelterbelts. Also make sweeps through grass and other herbaceous cover in the interior, taking about 100 feet at a time in good cover.

(5) Attempt to survey all farmsteads with a similar intensity. Most farmsteads should be covered by one person in approximately 15 minutes, and not more than 30 minutes should be spent in any area; two take correspondingly less time.

(6) Don't prolong a search if no birds are found during the first coverage. Also, don't terminate a search after the first observation, as some farmsteads hold two or more pairs. Always observe as closely as possible where flushed birds land so as not to count them twice; however, if there is doubt as to the identify of observed birds please note it.

(7) Don't use a dog in the survey, so that the results will be comparable with all other surveys.

(8) Record all the data requested on the survey form, including the search time and subjective evaluation of the habitat quality.

Provide the survey data to the Wildlife Branch, Regina, by May 15th, complete with maps showing the farmstead locations.

(9) Attempt to survey all farmsteads done in previous years.

Appendix 5c:
SASKATCHEWAN PHEASANT SPRING SURVEY

PROCEDURES:

1. Select a route of up to twenty miles in length (if not previously selected) through an area having reasonably good roads and good pheasant habitat.

2. All counts should be started one-half hour before official sunrise. It is desirable to arrive at the first stop several minutes before time to start the count.

3. Commencing thirty minutes before sunrise, listen for exactly two minutes by your watch and record the total number of cock pheasant calls heard.

4. Get back into the vehicle immediately after the two-minute period is up and drive to the next stop.

5. Stop the vehicle, get out, taking care not to slam the door, and listen for another two-minute period.

6. Continue the procedure until the route is completed.

7. Each route should be surveyed completely on two seperate days. Variations in weather may cause an appreciable difference in counts.

8. The survey results must be received by Wildlife Branch, Regina, by May 15 in order to be used in establishing regulations for the coming year. Wildlife Management Division season proposals have to be prepared by June 1 in order to provide sufficient time for Department and Game Advisory Committee review, and the subsequent government decision making process.

9. Questions regarding pheasant surveying, should be directed to Marvin Hlady or Syd Barber.

NOTE:

Record the pheasant observed, both male and female, while driving and while stopped, in the space provided on the Pheasant Crowing Count Sheet.

The mile intervals may be shortened or lengthened slightly to avoid stopping in front of a house, in a depression, or for similar reasons.

ONE WORD OF CAUTION:

Wind velocity is a most important consideration, since if the wind is very strong, the birds will not call as frequently nor will their calls be as audible as on days of relatively little wind. Do not make counts on mornings when wind velocity is in excess of 10-15 miles per hour. This can be discouraging, since on occasion the velocity will be well below 10-15 mph at the start of the count and then after three or four stops the wind may suddenly rise in excess of 10-15 mph and thus nullify the count. To determine if counts should be made follow these simple rules -- when rain is falling or if wind is in excess of 10-15 mph, counts should be delayed to the following morning.

SASKATCHEWAN RUFFED GROUSE SPRING SURVEY (DRUMMING COUNT)

Background

The ruffed grouse has become one of the most important upland game birds in Saskatchwean. High populations during the late 1970's resulted in estimated annual provincial harvests of close to 100,000, ranking ruffed grouse second in importance to sharp-tailed grouse. Of course, the "ruffie" has always ranked first in the Commercial Forest but lately has outstripped the sharptail in the Parkland.

The increased utilization of ruffed grouse encourages obtaining better information for managing the species. The spring drumming count is a widley used census technique in North America as it is believed to provide a reliable index to the size of the breeding population. The technique was reinstituted locally in Saskatchewan in 1978. It was applied to most of the ruffed grouse range in 1979 in conjunction with considerable Regional interest. The extensive survey network should provide good information on relative population sizes and population fluctuations, that will greatly assist the management of this species. Refinements in survey locations and techniques hould be possible from time to time.

Methods

1. Surveys should be conducted between April 15 and May 15. Ruffed grouse activity and road conditions will probably result in the Commercial Forest surveys tending to be done during the last half of this period.

2. Survey routes should consist of at least 15 but preferably 20 stops spaced at regular intervals, ideally 1 km or 1 mile apart. Stops must be located at least one half mile apart to ensure no overlap of counts. Patchy habitat distribution in some Parkland areas has resulted in some subjective, irregular spacing of stops, but this is an exceptional situation. Established survey routes should be run exactly as they were before, stopping at the same sites.

3. Surveys should be done three times, preferably within the space of a few days. An attempt should be made to survey under good weather conditions (i.e., calm, clear, with no recent precipitation) but whatever the conditions are they should be recorded on the data sheet (wind, temperature, cloud and precipitation).

4. The surveys should be conducted between daybreak (i.e., one half hour before sunrise) and 8:00 a.m. and/or between 5:00 p.m. and sunset, as drumming tends to peak during these times. Morning is probably the preferably survey time. Ideally, the route should be run at least once from each end to increase the probability of visiting all stops at least once under good weather conditions and when drumming is at a peak. One method of data analysis is to select the highest count obtained for each stop, not simply the highest route total.

5. At each stop, listen carefully for a full four minutes, counting the drums heard, Ruffed grouse males tend to drum with a frequency of 4 minutes or less when they are active. Determining the number of individuals involved is difficult, however, and is regarded as optional.

6. After completing a four minute listening stop, immediately record the data and proceed to the next stop. The survey should be completed as quickly as possible, ideally within 2 - 2½ hours, to minimuze variation in weather and drumming activity.

7. Survey reports should include all completed data sheets, maps where route changes or new surveys are involved, and any additional comments you wish to make.

8. The survey results must be received by Wildlife Branch, Regina, by May 15 in order to be used in establishing regulations for the coming year. Wildlife Management Division season proposals have to be prepared by June 1 in order to provide sufficient time for Department and Game Advisory Committee review, and the subsequent government decision making process.

9. Questions concerning ruffed grouse surveying should be directed to Marvin Hlady or Syd Barber.

Appendix 6. Duck Hunting Activity in Saskatchewan, 1972-81.

YEAR	ACTIVE DUCK HUNTERS	DUCK HUNTER DAYS	HUNTER DAYS/ ACTIVE HUNTER
1972	44,900	-	-
1973	37,100	80,200	2.2
1974	44,200	119,600	2.7
1975	52,400	134,700	2.6
1976	53,800	141,800	2.6
1977	49,400	113,900	2.3
1978	44,800	94,300	2.1
1979	44,600	100,600	2.3
1980	39,700	84,500	2.1
1981	30,200	59,500	2.0
72-80 Av.	45,700	108,700*	2.4*
% Change 81 vs 80	-24	-30	- 8
% Change 81 vs Av.	-34	-45	-17

* 1973-80 Average

Appendix 7. Goose Hunting Activity in Saskatchewan during the 1970's

YEAR	ACTIVE GOOSE HUNTERS	GOOSE HUNTER DAYS	HUNTER DAYS/ ACTIVE HUNTER
1972	28,000	-	-
1973	27,400	46,800	1.7
1974	26,800	50,600	1.9
1975	35,200	68,900	2.0
1976	35,800	72,000	2.0
1977	37,700	73,900	2.0
1978	35,200	64,600	1.8
1979	34,400	58,700	1.7
1980	34,700	61,600	1.8
1981	29,000	53,900	1.9
72-80 Av.	32,800	62,100*	1.9*
% Change 81 vs 80	-16	-12	+ 4
% Change 81 vs Av.	-12	-13	0

* 1973-80 Average

Saskatchewan Tourism and Renewable Resources

Wildlife Bulletin

82-W-7

July 9, 1982.

1982 GAME BIRD SEASONS (Tentative)

1. Weather has again had its effect of upland bird seasons. Severe winter conditions have reduced populations in the southeast w[illegible]ch pheasants and hungarian partridge being hardest hit. The early June snow storm in the southwest will likely adversely affect nesting success of both upland birds and waterfowl.
2. Sharp-tailed and ruffed grouse seasons will be later this year in response to the late spring which is expected to have delayed nesting.
3. Hungarian partridge seasons are also later in the southwest in response to the affects expected from the early June snow storm.
4. The late pheasant season from November 26 to December 18 will include a larger area than last year. Zone 6 has been included in this season rather than establishing a separate late season as the past.
5. Hungarian partridge bag limits have been reduced from 6 daily last year to 5 daily for 1982.
6. Waterfowl seasons are unchanged from last year. The pond index is near normal this year with the number of breeding mallards up in response to the improved water conditions. These improvements have allowed maintenance of duck bag limit at 8 daily.

1982 GAME BIRD SEASONS: Saskatchewan Residents, Canadian Residents*, and Non-Residents**

Upland Game Birds

Species	Wildlife Management Zones	Season Dates	Bag Limit
Sharp-tailed grouse ** Non-Residents may not hunt sharp-tailed grouse in Zones 6, 14 & 15.	Zones 1,7,8 east of Highway #2, and 9 to 22, including Elbow, Estevan-Cambria, Lomond #3 (at Maxim), Last Mountain Lake and Fort-a-la-Corne Wildlife Management Units.	Oct. 4 - Nov. 13	5 daily, 10 possession
	Zones 2 to 6, and 8 west of Highway #2	Oct. 13 - Nov. 13	5 daily, 10 possession
	Zones 23 to 33, including Meadow Lake and Nipawin Provincial Parks; Pasquia and Porcupine Wildlife Management Units.	Oct. 4 - Nov. 27	5 daily, 10 possession
	Zones 34 to 37 including Lac La Ronge Provincial Park.	Aug. 30 - Nov. 27	5 daily, 10 possession
Hungarian partridge ** Non-Residents may not hunt Hungarian partridge in Zones 5,6,14 & 15.	Zones 1,7,8 east of Highway #2, and 9 to 16, including Last Mountain Lake Wildlife Management Unit.	Sept. 27 - Nov. 13	5 daily, 10 possession
	Zones 2 to 6, and 8 west of Highway #2.	Oct. 13 - Nov. 13	5 daily, 10 possession
	Elbow, Estevan-Cambria and Lomond #3 (at Maxim) Wildlife Management Units.	Oct. 4 - Nov. 13	5 daily, 10 possession
	Zones 17 to 22, including Fort-a-la-Corne Wildlife Management Unit.	Sept. 27 - Nov. 13	3 daily, 6 possession
Ruffed grouse	Zones 1 to 22, including Last Mountain Lake and Fort-a-la-Corne Wildlife Management Units; and Duck Mountain Provincial Park.	Sept. 27 - Nov. 13	5 daily, 10 possession
	Elbow Wildlife Management Unit	Oct. 4 - Nov. 13	5 daily, 10 possession
	Zones 23 to 33, including Meadow Lake and Nipawin Provincial Parks; Pasquia and Porcupine Wildlife Management Units.	Sept. 13 - Nov. 27	5 daily, 10 possession
	Zones 34 to 37, including Lac la Ronge Provincial Park.	Aug. 30 - Nov. 27	5 daily, 10 possession
	Moose Mountain Provincial Park.	Nov. 1 - Nov. 24	5 daily, 10 possession
	Greenwater Lake Provincial Park.	Nov. 1 - Nov. 27	5 daily, 10 possession
Spruce grouse	Zones 20 and 21, including Fort-a-la-Corne Wildlife Management Unit.	Sept. 27 - Nov. 13	5 daily, 10 possession
	Zones 23 to 33, including Meadow Lake and Nipawin Provincial Parks; Pasquia and Porcupine Wildlife Management Units.	Sept. 13 - Nov. 27	5 daily, 10 possession
	Zones 34 to 37, including Lac la Ronge Provincial Park.	Aug. 30 - Nov. 27	5 daily, 10 possession
Ptarmigan	Zones 27 to 33, including Meadow Lake and Nipawin Provincial Parks	Sept. 13 - Jan. 29, 1983	10 daily, 20 possession
	Zones 34 to 37, including Lac la Ronge Provincial Park.	Aug. 30 - Jan. 29, 1983	10 daily, 20 possession
Ring-necked Pheasant (Cock birds only) Open to Saskatchewan Residents Only. Game Bird Licence must be purchased before buying a Cock Pheasant Licence.	Zones 1 to 17, including Last Mountain Lake, Elbow, Estevan-Cambira, and Lomond #3 (at Maxim) Wildlife Management Units.	Oct. 6 - Nov. 13	5 daily, 10 possession
	Zones 1 to 9, 12 and 17, including Elbow, Estevan-Cambria, and Lomond #3 (at Maxim) Wildlife Management Units.	Nov. 26 - Dec. 18	5 daily, 10 possession

Waterfowl			
Ducks	Zones 1 to 22, including Elbow Wildlife Management Unit; and Last Mountain Lake Wildlife Management Unit starting Sept. 15.	Sept. 8 - Dec. 11	8 daily, 16 possession
	Zones 23 to 37 including Meadow Lake, Nipawin and Lac la Ronge Provincial Parks; Pasquia and Porcupine Wildlife Management Units.	Sept. 1 - Dec. 4	8 daily, 16 possession
Coots and Common Snipe	Zones 1 to 22, including Elbow Wildlife Management Unit; and Last Mountain Lake Wildlife Management Unit starting Sept. 15.	Sept. 8 - Dec. 11	10 daily, 20 possession
	Zones 23 to 37, including Meadow Lake, Nipawin and Lac la Ronge Provincial Parks; Pasquia and Porcupine Wildlife Management Units.	Sept. 1 - Dec. 4	10 daily, 20 possession
Sandhill Cranes	Zones 10 to 13, and 19 to 21	Sept. 1 - Sept. 7	4 daily, 8 possession
	Zone 6	Sept. 13 - Sept. 18	4 daily, 8 possession
Geese	Zones 1 to 6, 8, 9 and 12 to 15, including Elbow Wildlife Management Unit	Sept. 22 - Dec. 11	5 daily, (2 only may be white-fronted geese) 10 possession, (4 only may be white-fronted geese)
*** Goose season for Canadian Residents and Non-Residents begins on Sept. 29th in Zones 1 to 25, and 28.	Zones 7, 10, 11 and 16 to 22, including Last Mountain Lake Wildlife Management Unit.	Sept. 15 - Dec. 4	5 daily, (3 only may be white-fronted geese) 10 possession, (6 only may be white-fronted geese)
	Zones 23 to 37, including Meadow Lake, Nipawin and Lac la Ronge Provincial Parks; Pasquia and Porcupine Wildlife Management Units.	Sept. 1 - Dec. 4	5 daily, (3 only may be white-fronted geese) 10 possession, (6 only may be white-fronted geese)
	Note: Starting October 15th, 3 additional Snow or Ross' geese may be taken daily. 6 additional Snow or Ross' geese may be kept in possession.		

Morning Hunting of Geese Only:

From September 1 to October 20, inclusive, in Zones 1 to 25, 28, 30 and 32, open season for geese includes that portion of the day from one-half hour before sunrise to 12:00 noon, local time.

Rose MacLennan

R.R. MacLennan, Director,
Wildlife Branch.

Appendix 9:

Criteria to be used to determine duck bag limits in Saskatchewan during stabilized hu ting regulations, 1979-1984.

1. The duck bag limit in Saskatchewan will be 8 birds per day, 16 in possession with no species restriction except where:

   - $P + M \leq 3.0$ m. or $M \leq 1.75$ m. when the bag limit = 6 per day; 12 in possession.
   - $P + M \leq 2.5$ m. or $M \leq 1.5$ m. when the bag limit = 4 per day; 12 in possession.

   When bag limits identified by P + M differ from M, P + M limits will be implemented only when similar P + M values occur for 2 years in a row.

2. The third option (4 bag limit) is considered a response to a crisis situation and will be considered only when equivalent harvest reductions are implemented throughout the Central and Mississippi Flyways.

(After Prairie Waterfowl Harvest Program 1979-84 - Saskatchewan).

Appendix 10: Sask. D.T.R.R. - Wildlife Branch Reconnaissance aerial waterfowl surveys fall, 1981.

LAKE AND LOCATION	DATE	WATERFOWL OBSERVED: GEESE *	DUCKS	CRANES
Boulder Lake (Southeast of Watrous)	12/9/81	425	11,000	200
	5/10/81	8000	10,000	
	19/10/81	355	5230(2600)	
	TOTALS	8780	26,230	200
Zelma Reservoir (near Zelma)	12/9/81		3050(1500)	
	5/10/81	1000	8000	
	12/10/81		4450	
	TOTALS	1000	15,500	
Melville Region				
**Theodore Reservoir (NW Yorkton)	12/9/81 (1:25p.m.)	450	100(100)	
** Rousay Lake (D.U.) (SW Yorkton)	12/9/81 (1:36 p.m.)	630	35,000-40,000 mixed dabblers	

** Osbervors Barber & Killaby. Weather sunny, 25° c., Mod. N.W. winds

D.T.R.R. - WILDLIFE BRANCH

Waterfowl Reconnaissance Aerial Surveys - September 12, October 5, and October 19, 1981

LAKE AND LOCATION	DATE	WATERFOWL OBSERVED		
		GEESE*	DUCKS	CRANES
Wolverine Lake (Southwest of Humboldt)	12/9/81	440	4550(4050)[a]	
	5/10/81	290	6000	
	19/10/81	300	3250	
	TOTALS	1030	13,800	
"Spoony" Lake (4 miles north of Wolverine)	12/9/81	176	100(100)	
	5/10/81	3000	600	
	19/10/81	800		
	TOTALS	3976	700	
Delwood Reservoir (5 miles southwest of Wolverine)	12/9/81	55	270(270)	
	5/10/81	170	1500	
	19/10/81	400	200	
	TOTALS	625	1970	
"Freshwater" Lake (4 miles northeast of Watrous)	12/9/81	450	860(860)	200
	5/10/81	3	170	
	19/10/81	40	110	
	TOTALS	493	1440	200

(4050)[a] Dabbler count, if segregated from total.

* All geese observed during 1st survey (September 12) were large Canada geese; Undifferentiated as to species or race during last 2 surveys.

Appendix 11: Sharp-tailed Grouse Reproduction*
Saskatchewan 1981

Area	Total Adults	Total Juveniles	Total Sample	% Juveniles	Juvenile /Adult
G.M.Z. 5	78	59	137	43.1	.76
6	43	10	53	18.9	.19
Grassland	125	77	202	38.1	0.62
G.M.Z. 7	33	39	72	54.2	1.18
8	44	57	101	56.4	1.30
9	112	101	213	47.4	0.90
10	33	32	65	49.2	0.97
11	113	64	177	36.2	0.57
12	31	28	59	47.4	0.90
Farmland	390	317	707	44.8	0.81
Parkland	47	46	93	49.5	0.98
Comm. Forest	39	24	63	38.1	0.62
PROVINCE	601	464	1065	43.6	0.77

* Inferred from sample of wings from hunter killed birds; areas with sample over 50 are shown.

Appendix 12: 1982 Sharp-tailed Grouse
Spring Survey Summary

Survey Block	G.M.Z.	Sq.Mi.	Dancing Grounds	Males/ Dancing Grounds	Males/ Sq.Mi.	% Difference 1981	% Difference 1980
Val Marie	2	36	3	13.67	1.14	- 7	
Cypress Hills	3&4	43	4	15.25	1.42	-25	
N. Sandhills	5	19	10	15.4	8.10		
Sceptre S.	5	20	10	7.70	3.85		-59
Webb	5	20	8	11.0	4.40	-30	
Sask. Landing	6	27.5	6	11.33	2.47		-49
GRASSLAND		165.5	42	12.0	3.04		
Goodwater	7	18	12	6.08	4.05		-76
Indian Head S.	7	10	3	12.33	3.70	-43	
Meyronne	8	16	4	12.0	3.00	-44	
Mortlach	9	20	6	11.33	3.40	-48	
Bethune	9	28	3	14.67	1.57	-46	
Quill Lakes	10	16	5	24.4	7.62	+126	
Peterson	10&21	24	3	14.0	1.75	+ 2	
Gibbs	11	16	4	22.5	5.62	- 9	
Coteau	12	25	10	5.6	2.24	-45	
Outlook W.D.F.	12	1.4	1	9	6.54		
Bradwell	13	24	9	11.44	4.29	- 7	
Goose Lake	13	21.5	5	9.8	2.28		
Asquith	13	36	3	20.0	1.67	-49	
Alsask	14	19	8	12.88	5.42	-22	
Duperow	15	14	11	10.9	8.57	-24	
FARMLAND		288.9	87	11.77	3.54		
Moosomin	16	27	8	13.25	3.92	-34	
Carnduff	16	15	6	9.5	3.80	-44	
Calder	18	13.5	5	11.4	4.22		
Fort Block	19	24	7	9.43	2.75	-30	
Good Spirit	19	16	4	13.25	3.31		-53
Wingard	21	21.5	5	10.80	2.51		-36
Aroma Lake	22	18	5	13.4	3.72	0	
Evesham	22	20	5	22.2	5.56	- 2	
PARKLAND		155	45	12.69	3.68		
Bertwell	23	11.5	4	8.5	2.96	-55	
Donsland	28	11.25	4	12.75	4.53	-16	
Fairholme	32	19.75	2	5.0	0.51	-54	
COMMERCIAL FOREST		42.5	10	9.5	2.24		
PROVINCE		651.9	184	11.92	3.36		

Appendix 13: Hungarian Partridge Reproduction*
Saskatchewan 1981

Area	Total Adults	Total Juveniles	Total Sample	% Juveniles	Juvenile /Adult
G.M.Z. 5	24	26	50	52.0	1.08
6	26	45	71	63.4	1.73
Grassland	60	83	143	58.0	1.38
G.M.Z. 7	41	60	101	59.4	1.46
8	88	87	175	49.7	0.99
9	81	167	248	67.3	2.06
10	18	41	59	69.5	2.28
11	77	85	162	52.5	1.10
12	24	37	61	60.6	1.54
14	29	63	91	69.2	2.25
Farmland	364	551	915	60.2	1.51
Parkland	13	20	33	Sample too small	
PROVINCE	437	654	1091	59.9	1.50

* Inferred from sample of wings from hunter-killed birds; areas with sample size over 50 are shown.

Appendix 14 : Saskatchewan Pheasant Spring Breeding Population Index 1982 vs 1981

Game Management Area		Survey Area	Cock Crows Heard/Survey Stop		
			1981	1982	*1982 vs 1981
G.M.Z.	1	Big Beaver	2.5	0.6	- 76
	2	Val Marie	10.5	7.6	- 28
	2	Pinto Creek	5.2	2.3	- 56
	3	Maple Creek N.	2.8	4.0	+ 43
	6	Estuary-Chesterfield	4.0	3.6	- 10
	6	Twin Buttes-Davis	2.1	1.5	- 28
	6	Snakebite	2.1	1.2	- 43
Grassland			4.0	3.0	- 26
G.M.Z.	7	Marienthal	3.8	1.0	- 74
	7	Radville East	2.5	1.6	- 36
	8	Swift Current-Duncairn	2.7	0.9	- 67
	8	Cadillac-Ponteix	6.2	3.4	- 45
	8	Avonlea	1.6	0.6	- 62
	8	Bateman-Coderre	6.3	3.0	- 52
	8	Woodrow	2.6	2.0	- 23
	9	Moose Jaw South	4.6	3.2	- 30
	12	Qu'Appelle Dam-Eyebrow	0.4	0.4	0
	12	Outlook-Cutbank	0.5	0.4	- 20
Farmland			3.2	1.6	- 50
G.M.Z.	17	Welby West	2.2	3.8	+ 73
	17	Pheasant Creek	-	1.7	-
Parkland			2.2	2.8	+ 73
PROVINCE			3.5	2.2	- 35

Appendix 15 : Ruffed Grouse Reproduction*
Saskatchewan 1981

	Total Adults	Total Juveniles	Total Samples	% Juveniles	Juvenile /Adult
Farmland	32	38	70	54.3	1.19
Parkland	26	81	107	75.7	3.12
Comm. Forest	30	83	113	73.4	2.77
PROVINCE	88	202	290	69.6	2.30

* Inferred from sample of wings from hunter-killed birds; only areas with sample over 50 are shown.

Appendix 16 : Saskatchewan Ruffed Grouse
Breeding Population Index
Spring - 1982

Game Managment Zone	Survey Area	No. of Survey Stops	Highest No. of drums heard	Drums/ stop
3	Cypress Hills	11	13	1.18
16	Pipestone	15	15	1.00
16	Moose Mtn.	18	70	3.89
18	Duck Mtn.	20	34	1.70
19	Parkerview	20	4	0.20
19	Margo	15	40	2.67
21	Fort-a-la-Corne	16	1	0.06
21	Shellbrook	15	2	0.13
22	Lizzard Lake	20	5	0.25
23	Woody R. Road (S)	15	4	0.27
23	McBride Lake	17	0	0.00
23	Usta Tower Rd.	20	3	0.15
23	Greenwater	17	21	1.24
23	Ridge Road	15	0	0.00
23	Wood Lake Rd. (N)	18	2	0.11
24	Hwy. # 109	10	5	0.50
24-25	Fir River Rd.	20	5	0.25
28	Candle Lake	15	15	1.00
30	Chitek Lake	20	5	0.20
30-31	Big River	19	11	0.58
33	Mistohay	18	2	0.11
33	Mustus	20	2	1.10
PROVINCE	22 Survey Areas	374	258	0.69

Appendix 17. 1981 Big Game Seasons

Species		Game Management Zones Open	Season Dates	Limit	General Information
White-tailed Deer (archery only by residents only)	one deer	Zones 1 to 22, 29 and 34 to 37 — including Elbow and Fort-a-la-Corne Wildlife Management Units and Cypress Hills (West Block), Duck Mountain, Lac la Ronge and Moose Mountain Provincial Parks.	September 7 - October 17	one white-tailed deer either sex	Archery licences are valid only in the archery season September 7 to October 17. An unsuccessful archer may turn in his unused: (1) first archery licence and purchase a first regular licence; or (2) second archery licence and purchase a second regular licence at any Department office. Second white-tailed deer licences are valid only in Zones 23 to 28 and 30 to 33.
	two deer	Zones 23 to 28 and 30 to 33 — including Pasquia and Porcupine Wildlife Management Units, Greenwater, Meadow Lake and Nipawin Provincial Parks and Bronson Recreation Site.	September 7 - October 17	two white-tailed deer either sex - separate licences required	
White-tailed Deer (by residents, Canadian residents and non-residents)	one deer	Zones 29 and 34 to 37 — including Lac la Ronge Provincial Park	October 19 - December 5	one white-tailed deer either sex	
	two deer	Zones 23 to 28, 30, 31 and 33 — within the Northern Provincial Forest and Porcupine Provincial Forest only including Leaf Lake, Pasquia and Porcupine Wildlife Management Units and Greenwater, Meadow Lake and Nipawin Provincial Parks.	October 19 - October 31	two white-tailed deer either sex separate licences required.	Watch for signs designating the Northern and Porcupine Provincial Forest boundaries.
		Zones 23 to 28 and 30 to 33 — including Leaf Lake, Pasquia and Porcupine Wildlife Management Units, Greenwater, Meadow Lake and Nipawin Provincial Parks and Bronson Recreation Site.	November 16 - December 5	two white-tailed deer either sex - separate licences required.	Second white-tailed deer licences are valid only in Zones 23 to 28 and 30 to 33.
White-tailed Deer (by residents only)	one deer	Zones 1 to 4, 10, 18 and 19 - including Cypress Hills Provincial Park (West Block)	November 16 - November 21	one white-tailed deer either sex	Please refer to the Zone Map for the portion of Management Zones 9 and 13 restricted to shotgun and archery hunting only. Muzzle loading firearms are permitted within the shotgun-archery areas.
		Zones 5, 6, 8, 11, 12, 14, 15, 20, 21 and 22 - including Elbow, Fort-a-la-Corne and Last Mountain Lake Wildlife Management Unit and Duck Mountain Provincial Park.	November 16 - November 28	one white-tailed deer either sex	
		Zones 7, 16 and 17 — including Brokenshell No. 1 and No. 2, Estevan-Cambria, Lomond No. 3 (at Maxim) Wildlife Management Units and Moose Mountain Provincial Park.	November 16 - December 5	one white-tailed deer either sex	
		Zones 9 and 13, during that period of each day from ½ hour before sunrise to 12:00 noon C.S.T.	November 16 - November 28	one white-tailed deer either sex	
		Shotgun-archery area only in Zone 9 (regular hours)	November 16 - November 28	one white-tailed deer either sex	
		Shotgun-archery area only in Zone 13 (regular hours)	November 16 - December 5	one white-tailed deer either sex	
White-tailed Deer (by Canadian residents)	one deer	Zones 5, 6, 8, 11, 12, 14, 15, 20, 21 and 22 - including Elbow, Fort-a-la-Corne, and Last Mountain Lake Wildlife Management Units and Duck Mountain Provincial Park.	November 23 - November 28	one white-tailed deer either sex	Please refer to the Zone Map for the portion of Management Zones 9 and 13 restricted to shotgun and archery hunting only. Muzzle loading firearms are permitted within the shotgun-archery areas.
		Zones 7, 16 and 17 - including Brokenshell No. 1 and No. 2, Estevan-Cambria, Lomond No. 3 (at Maxim) Wildlife Management Units and Moose Mountain Provincial Park	November 23 - December 5	one white-tailed deer either sex	
		Zones 9 and 13 during that period of each day between ½ hour before sunrise and 12:00 noon C.S.T.	November 23 - November 28	one white-tailed deer either sex	
		Shotgun-archery area only in Zone 9 (regular hours)	November 23 - November 28	one white-tailed deer either sex	
		Shotgun-archery area only in Zone 13 (regular hours)	November 23 - December 5	one white-tailed deer either sex	
Regular Elk (by residents only)		Zones 23, 24, 25, 28, 31 and 33 — including Pasquia and Porcupine Wildlife Management Units and Nipawin Provincial Park	September 21 - October 3	one antlered elk	"Antlered Elk" means any elk having an antler or antlers at least 15 centimetres in length as measured on the outside curve of the antler from the skull to the tip.
		Zones 26 and 27	September 28 - October 3	one antlered elk	
		Zone 30 including Cookson Wildlife Management Unit and that portion of Zone 28 west of provincial Highway No. 2	October 26 - November 14	one elk either sex	Note: Hunters will be restricted to designated trails within the Cookson Wildlife Management Unit.

Regular Moose (by residents only)	early season	Zones 23 to 31 and 33 — including Leaf Lake, Pasquia and Porcupine Wildlife Management Units and Nipawin Provincial Park.	October 5 - October 10	one bull or one 1981 calf moose	"Bull Moose" means a male moose one or more years old. "Calf Moose" means any moose born in 1981. "Cow Moose" means a female moose one or more years old. Successful applicants for a special moose licence are not eligible to purchase a regular moose licence. The antlers of bull moose and the lower jaw of calf moose must accompany the carcass.
	late season	Zone 35	August 31 - September 19	one bull or one 1981 calf moose	
		Zones 34, 36 and 37 - including Lac la Ronge Provincial Park	August 31 - September 26	one bull or one 1981 calf moose	
		Zones 23, 24, 25 and 28 to 33 — including Leaf Lake, Pasquia and Porcupine Wildlife Management Units, Nipawin Provincial Park and Bronson Recreation Site	November 16 - November 28	one bull or one 1981 calf moose	
		Zones 26 and 27 — including Pasquia Wildlife Management Unit	November 16 - November 21	one bull or one 1981 calf moose	
		Zones 34 to 37 — including Lac la Ronge Provincial Park	November 2 - November 28	one bull or one 1981 calf moose	
Guided Moose (by Canadian residents and non-residents)		Zones 26 and 27 including Pasquia Wildlife Management Unit	October 5 - October 24 November 2 - November 21	one bull or one 1981 calf moose	The antlers of bull moose and the lower jaw of calf moose must accompany the carcass. Services of a registered guide must be used. 400 Guided Moose Licences are available. Licences to be issued by the Department o Northern Saskatchewan (Quotas in brackets) 26(55), 27(135), 33(10 34(10), 35(20), 36(130), 37(40).
		Zone 33	September 14 - September 19 October 5 - October 10 November 2 - November 28	one bull or one 1981 calf moose	
		Zones 34, 36 and 37 — including Lac la Ronge Provincial Park	August 31 - September 26 November 2 - November 28	one bull or one 1981 calf moose	
		Zone 35	August 31 - September 19 November 2 - November 28	one bull or one 1981 calf moose	
Woodland Caribou (by residents, Canadian residents and non-residents)		Zones 24,25,27,28,29,31 and 33 — including Pasquia Wildlife Management Unit and Nipawin Provincial Park	October 5 - October 10 November 16 - November 28	one woodland caribou either sex	Canadian residents and non-residents must use the services of a registered guide when hunting caribou.
		Zones 34 and 36 — including Lac la Ronge Provincial Park	August 31 - September 26 November 2 - November 28	one woodland caribou either sex	
		Zone 35	August 31 - September 19 November 2 - November 28	one woodland caribou either sex	
Barren-Ground Caribou (by residents of Zone 37 only)		Zone 37	November 2 - February 27, 1982	two barren-ground caribou either sex, separate licences required	Resident of Zone 37 means a Saskatchewan Resident living in Zone 37 during the past three months.
Bear (by residents, Canadian residents and non-residents)		Zones 23 to 37 — including Pasquia and Porcupine Wildlife Management Units, and Bronson Recreation Site	August 31 - October 10	two bear either sex, separate licences required	Spring bear licences valid in fall season, if unused.
		Lac la Ronge, Meadow Lake and Nipawin Provincial Parks and in Zones 18, 20, 21 and 22 including Duck Mountain Provincial Park	September 9- October 10	two bear either sex, separate licences required	
		Fort-a-la-Corne Wildlife Management Unit only	September 21- October 10	two bear either sex, separate licences required	

SPECIAL SEASONS (RESIDENTS ONLY) BY APPLICATION AND DRAW ONLY

	Game Management Zones Open	Season Dates	Limit	General Information
Antelope (archery tentative)	Zones 1 to 6 and 8	September 7 - October 10	one antelope either sex	Antelope archery licences are valid in any open zone during the archery season only.
Antelope (tentative)	Zones 1 to 6 and 8	October 26 - October 31	one antelope either sex	Antelope licence quotas will be set after July aerial surveys
Mule Deer (archery)	Zones 1 to 4, 8 and 12 including Elbow Wildlife Management Unit and Cypress Hills Provincial Park (West Block)	September 7- October 10	one mule deer either sex	Licence quotas (in brackets) for each area: 1 to 4, 8 and 12 combined (100), 5(150),6(100)
	Zones 5 and 6 including Saskatchewan Landing Provincial Park	September 14- September 26	one mule deer either sex	Archery licences valid only in the archery season.
Mule Deer	Zones 1 to 4, 8 and 12 including Cypress Hills Provincial Park (West Block) and Elbow Wildlife Management Unit.	November 2 - November 7	one mule deer either sex	*Note: Zone 3 licences valid south of Highway No. 1 only.
	Zones 5(700), 6A(550) including Saskatchewan Landing Park, 6B(60), 6C(100. Note: Muzzle loading firearms only in Saskatchewan Landing Park	November 5 - November 7	one mule deer either sex	Licence quotas (in brackets) for each zone: 1(50), 2(700), 3(300) 4(250), 5(1,400), 6A(1,100), 6B(120), 6C(200), 8(150),12(50).
	Zones 5(700), 6A(550), including Saskatchewan Landing Park, 6B(60), 6C(100). Note: Muzzle loading firearms only in Saskatchewan Landing Park	November 9 - November 11	one mule deer either sex	6B is the Burstall sandhills complex west of Highway No. 21. 6C is the Cabri sandhills comple along the South Saskatchewan Riv north of Cabri. Watch for signs 6A is the remaining portion of Zone 6.
Special Elk	Zones 3 and 4 including Cypress Hills Provincial Park (West Block)	October 19 - October 24	one elk either sex	Licence quotas(in brackets) for each area,3 and 4 combined (200 16(125), Fort-a-la-Corne(275), Zone 23(300).
	Zones 3 and 4 including Cypress Hills Provincial Park (West Block)	November 9 - November 14	one elk either sex	
	Zone 16 including Moose Mountain Provincial Park	October 26 - October 31	one elk either sex	
	Fort-a-la-Corne Wildlife Management Unit only	August 31 - September 19 November 2 - November 14	one elk either sex	
	Zone 23 including Porcupine Wildlife Management Unit and Greenwater Provincial Park	October 26 - October 31	one elk either sex	
Special Moose	Zones 23 to 27, 30 and 33 — including Leaf Lake, Pasquia and Porcupine Wildlife Management Units and Meadow Lake Provincial Park	September 14 - September 19 November 2 - November 14	one moose either sex	Licence quotas (in brackets) for each area: 3 and 4 combined (50), 16(175), 18(100), 22(50), 24(400), 24(400), 25(300), 26(200), 27(100), 30(400), 32(500), 33(100), Fort-a-la-Cor (200), Greenwater Lake Park (50
	Zone 32	November 2 - November 14	one moose either sex	
	Zone 16 including Moose Mountain Provincial Park	November 2 - November 7	one moose either sex	
	Zone 18 including Duck Mountain Provincial Park	November 2 - November 7	one moose either sex	
	Greenwater Lake Provincial Park only	November 9 - November 14	one moose either sex	
	Zone 22	November 9 - November 14	one moose either sex	
	Fort-a-la-Corne Wildlife Management Unit only	September 21 - October 3 November 2 - November 14	one moose either sex	
	Zones 3 and 4 including Cypress Hills Provincial Park (West Block)	October 26 - October 31	one moose either sex	

Appendix 18. 1982 Big Game Seasons

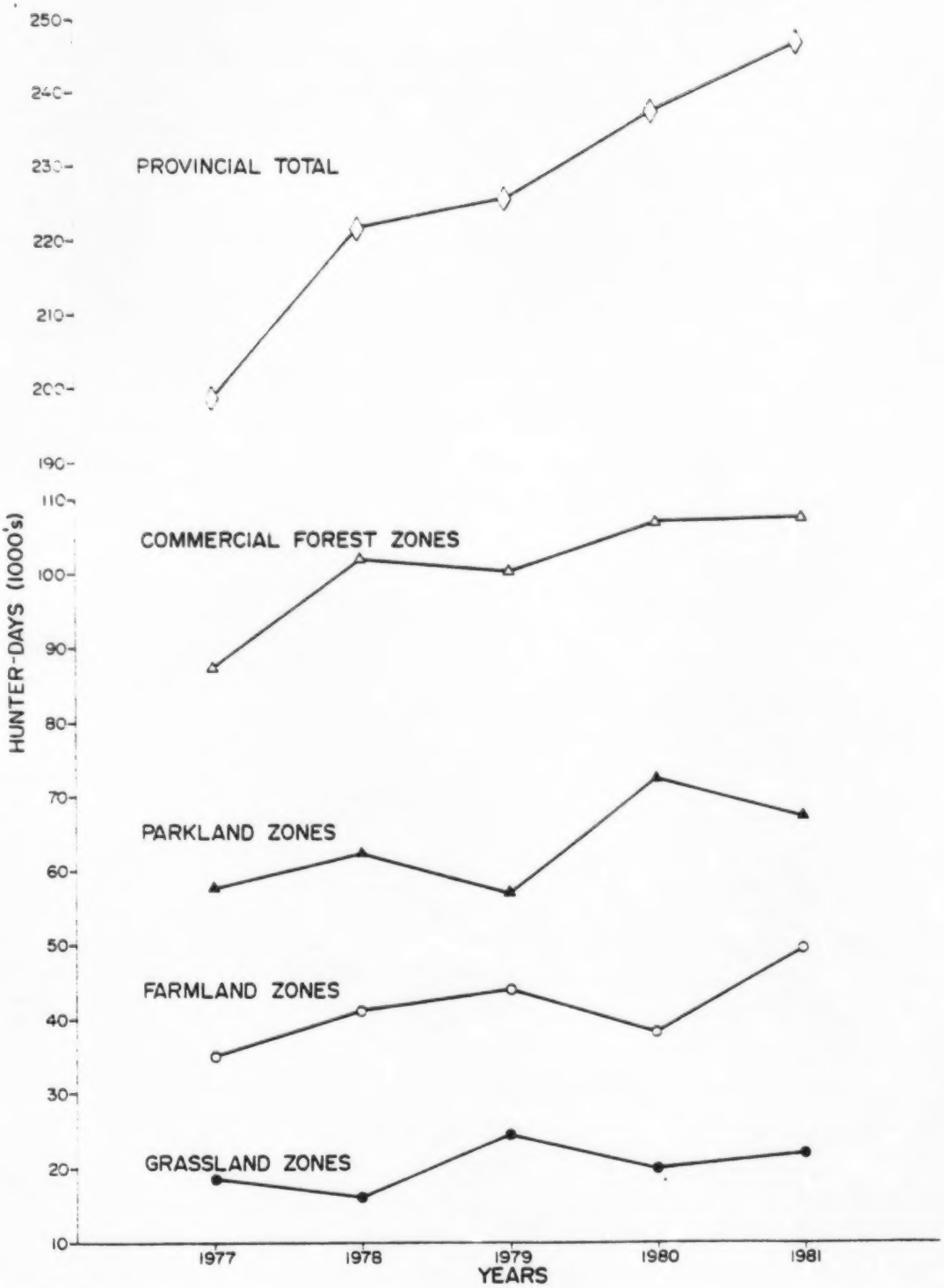
SPECIES			GAME MANAGEMENT ZONES OPEN	SEASON DATES	LIMIT	GENERAL INFORMATION
White-tailed Deer (Primitive Weapons) Saskatchewan Residents Only	Archery	one deer	Zones 1 to 22, 29 and 33 to 37 - including Fort-a-la-Corne Wildlife Management Unit, Meadow Lake, Duck Mountain and Lac la Ronge Provincial Parks.	Sept. 6 - Oct. 16	one white-tailed deer either sex	- Archery licences are valid only in the archery season Sept. 6 to Oct. 16 - An unsuccessful archery may turn in his unused:(1) first archery licence and purchase a first regular licence; or (2) second archery licence and purchase a second regular licence at any Department office. - Second white-tailed deer licences are valid only in Zones 23 to 28 and 30 to 32. - Muzzle loading rifle white-tailed deer licences valid only in muzzle loading rifle season Oct. 4 to Oct. 16.
		two deer	Zones 23 to 28 and 30 to 32 including Pasquia and Porcupine Wildlife Management Units, Greenwater and Nipawin Prov. Parks and Bronson Recreation Site.	Sept. 6 - Oct. 16	two white-tailed deer either sex - separate licences required	
	Muzzle Loading Rifles	one deer	Zones 1 to 22, 29 and 33 to 37 - including Fort-a-la-Corne Wildlife Management Unit, Meadow Lake, Duck Mountain and Lac la Ronge Provincial Parks.	Oct. 4 - Oct. 16	one white-tailed deer either sex	
		two deer	Zones 23 to 28 and 30 to 32 - including Pasquia and Porcupine Wildlife Management Units, Greenwater and Nipawin Provincial Parks and Bronson Recreation Site.	Oct. 4 - Oct. 16	two white-tailed deer either sex	
White-tailed Deer (by Saskatchewan Residents, Canadian Residents and Non-Residents)		one deer	Zones 29 and 33 to 37 - including Lac la Ronge and Meadow Lake Provincial Parks.	Nov. 1 - Nov. 27	one white-tailed deer either sex	
		two deer	Zones 23 to 28 and 30 to 32 - including Leaf Lake, Pasquia and Porcupine Wildlife Management Units, Greenwater, and Nipawin Prov. Parks and Bronson Recreation Site.	Nov. 8 - Nov. 27	two white-tailed deer either sex - separate licences required	- Second white-tailed deer licences are valid only in Zones 23 to 28 and 30 to 32.
White-tailed Deer (by Saskatchewan Residents Only)			Zones 2 to 7, 8 west of Provincial Highway No. 19, 10 to 12 and 14 to 22 including: Brokenshell No. 1 and No. 2, Estevan-Cambria, Lomond No. 3 (at Maxim), Elbow, Fort-a-la-Corne and Last Mountain Lake Wildlife Management Units; Moose Mountain and Duck Mountain Provincial Parks.	Nov. 15 - Nov. 24	one white-tailed deer either sex	
		one deer	Zones 1, 8 east of Provincial Highway No. 19.	Nov. 15 - Nov. 20	one white-tailed deer either sex	- Please refer to the Zone Map for the portion of Management Zones 9 and 13 restricted to shotgun and archery hunting only. Muzzle loading firearms are permitted within the shotgun-archery areas.
			Zones 9 and 13, during that period of each day from ½ hour before sunrise to 12:00 noon C.S.T.	Nov. 15 - Nov. 24	one white-tailed deer either sex	
			Shotgun-archery areas only in Zones 9 and 13 (regular hours)	Nov. 15 - Nov. 24	one white-tailed deer either sex	
White-tailed Deer (by Canadian Residents)			Zones 2 to 7, 8 west of Prov. Highway No. 19, 10 to 12 and 14 to 22 including: Brokenshell No. 1 and No. 2 Estevan-Cambria, Lomond No. 3 (at Maxim), Elbow, Fort-a-la-Corne, and Last Mountain Lake Wildlife Management Units; Moose Mountain and Duck Mountain Prov. Parks.	Nov. 22 - Nov. 24	one white-tailed deer either sex	- Please refer to the Zone Map for the portion of Management Zones 9 and 13 restricted to shotgun and archery hunting only. Muzzle loading firearms are permitted within the shotgun-archery areas.
		one deer	Zones 9 and 13, during that period of each day from ½ hour before sunrise and 12:00 noon C.S.T.	Nov. 22 - Nov. 24	one white-tailed deer either sex	
			Shotgun-archery areas only in Zones 9 and 13 (regular hours)	Nov. 22 - Nov. 24	one white-tailed deer either sex	
Regular Elk (by Saskatchewan Residents Only)			Zones 23, 24, 25, 28, 31 and 33 - including Pasquia and Porcupine Wildlife Management Units and Nipawin Provincial Park.	Sept. 20 - Oct. 2	one antlered elk	- "Antlered Elk" means any elk having an antler or antlers at least 15 centimetres in length as measured on the outside curve of the antler from the skull to the tip. - Note: Hunters will be restricted to designated trails within the Cookson Wildlife Management Unit.
			Zones 26 and 27	Sept. 27 - Oct. 2	one antlered elk	
			That portion of Zone 30, east of Provincial Highway No. 55 including Cookson Wildlife Management Unit and that portion of Zone 28 west of Provincial Highway No. 2.	Nov. 1 - Nov. 20	one elk either sex	
Regular Moose (by Saskatchewan Residents Only)		early season	Zones 23 to 31 and 33 - including Leaf Lake, Pasquia and Porcupine Wildlife Management Units and Nipawin Provincial Park.	Oct. 4 - Oct. 9	one bull or one 1982 calf moose	- "Bull Moose" means a male moose one or more years old. "Calf Moose" means any moose born in 1982. "Cow Moose" means a female moose one or more years old.
			Zone 35	Aug. 30 - Sept. 18	one bull or one 1982 calf moose	
			Zones 34, 36 and 37 including Lac la Ronge Provincial Park.	Aug. 30 - Sept. 25	one bull or one 1982 calf moose	
		late season	Zones 23, 24, 25, 30, 32 and 33 - including Leaf Lake, Pasquia and Porcupine Wildlife Management Units and Bronson Recreation Site	Nov. 15 - Nov. 27	one bull or one 1982 calf moose	- Successful applicants for a special moose licence are not eligible to purchase a regular moose licence. - The antlers of bull moose and the lower jaw of calf moose must accompany the carcass.
			Zones 26 to 29 and 31 - including Pasquia Wildlife Management Unit and Nipawin Provincial Park.	Nov. 15 - Nov. 20	one bull or one 1982 calf moose	
			Zones 34 to 37 - including Lac la Ronge Provincial Park.	Nov. 1 - Nov. 27	one bull or one 1982 calf moose	
Guided Moose (by Canadian Residents and Non-Residents)			Zones 26 and 27 including Pasquia Wildlife Management Unit	Oct. 4 - Oct. 23 Nov. 1 - Nov. 20	one bull or one 1982 calf moose	- The antlers of bull moose and the lower jaw of calf moose must accompany the carcass. - Services of a registered guide must be used. 400 Guided Moose Licences are available. (Quotas in brackets) 26 (55), 27(135), 33(10), 34(10), 35(20), 36(130), 37(40).
			Zone 33	Sept. 13 - Sept. 18 Oct. 4 - Oct. 9 Nov. 1 - Nov. 27	one bull or one 1982 calf moose	
			Zones 34, 35, 36 and 37 - including Lac la Ronge Provincial Park.	Sept. 13 - Sept. 18 Oct. 4 - Oct. 16 Nov. 1 - Nov. 27	one bull or one 1982 calf moose	

Woodland Caribou (by Saskatchewan Residents, Canadian Residents and Non-Residents)	Zones 24, 25, 27, 28, 29, 31 and 33 - including Pasquia Wildlife Management Unit and Nipawin Provincial Park.	Oct. 4 - Oct. 9 Nov. 15 - Nov. 27		one woodland caribou either sex	- Canadian residents and Non-residents must use the services of a registered guide when hunting caribou.
	Zones 34 and 36 - including Lac la Ronge Provincial Park.	Aug. 30 - Sept. 25 Nov. 1 - Nov. 27		one woodland caribou either sex	
	Zone 35	Aug. 30 - Sept. 18 Nov. 1 - Nov. 27		one woodland caribou either sex	
Barren-Ground Caribou (by Saskatchewan Residents of Zone 37 Only)	Zone 37	Nov. 1 - Feb. 1983	26	two barren-ground caribou either sex, separate licences required	- Resident of Zone 37 means Saskatchewan Resident living in Zone 37 during the past three months.
Bear (by Saskatchewan Residents, Canadian Residents and Non-Residents)	Zones 23 to 37 - including Pasquia and Porcupine Wildlife Management Units, and Bronson Recreation Site.	Aug. 30 - Oct. 9		two bear either sex, separate licences required	- Spring bear licences valid in fall season, if unused.
	Lac la Ronge, Meadow Lake and Nipawin Provincial Parks and in Zones 18, 20, 21 and 22 including Duck Mountain Provincial Park.	Sept. 8 - Oct. 9		two bear either sex, separate licences required	
	Fort-a-la-Corne Wildlife Management Unit Only.	Sept. 20 - Oct. 9		two bear either sex, separate licences required	

SPECIAL SEASONS (SASKATCHEWAN RESIDENTS ONLY) BY APPLICATION AND DRAW ONLY

SPECIES	GAME MANAGEMENT ZONES OPEN	SEASON DATES		LIMIT	GENERAL INFORMATION
Moose (archery)	Zone 32 including Bronsen Recreation Site	Sept. 20 - Oct. 2		one moose either sex	- Archery moose licences valid only during the archery season Sept. 20 to Oct. 2 Quota (100)
Antelope (archery tentative)	Zones 1 to 6, 8, 12 and 14	Sept. 6 - Oct. 9		one antelope either sex	- Antelope archery licences are valid in any open zone during the archery season only.
Antelope (tentative)	Zones 1 to 6, 8, 12 and 14.	Oct. 28 - Nov. 3		one antelope either sex	- Antelope licence quotas will be set after July aerial surveys
Mule Deer (archery)	Zones 1 to 4, 6A, 8, 9 12 to 15 and 22 including Saskatchewan Landing Provincial Park.	Sept. 6 - Oct. 9		one mule deer either sex	- Licence quotas (in brackets) for each area: 1 to 4, 6A, 8, 9, 12 to 15 and 22 combined (400), 5(150), 6B and 6C combined (50). Archery licences valid only in the archery season.
	Zone 5, 6B and 6C	Sept. 13 - Sept. 25		one mule deer either sex	
Mule Deer	Zones 1 to 4, 8, 12, 13 and 22 including Elbow Wildlife Management Unit.	Nov. 1 - Nov. 6		one mule deer either sex	- *Note: Zone 3 licences valid south of Highway No. 1 only. Zone 8 licences valid west of Highway No. 19 only. Zone 22 licences valid only in the southwest corner of the zone bounded by Highway Nos. 14, 21 and 40 excluding Manitou Island.
	Zones 5(700), 6A(550) including Saskatchewan Landing Park, 6B(60), 6C(100). Note: Muzzle loading firearms only in Saskatchewan Landing Park.	Nov. 4 - Nov. 6		one mule deer either sex	
	Zones 5(700), 6A(550), including Saskatchewan Landing Park, 6B(60), 6C(100). Note: Muzzle loading firearms only in Saskatchewan Landing Park.	Nov. 8 - Nov. 10		one mule deer either sex	- Licence quotas (in brackets) for each zone: 1(50), 2(900), 3(400), 4(350), 5(1,400), 6A (1,100), 6B(120), 6C(200), 8 (125), 12(125), 13(50), 22(50). - 6B is the Burstall Sandhills complex west of Highway No. 21. 6C is the Cabri Sandhills complete along the South Saskatchewan River north of Cabri. Watch for signs. 6A is the remaining portion of Zone 6.
Special Elk	Zone 16 including Moose Mountain Provincial Park	Oct. 25 - Oct. 30		one elk either sex	- Licence quotas (in brackets) for each area, 16(125), Zone 21 (275), Zones 23(300).
	That portion of Zone 21 north of Highway No. 3 including Fort-a-la-Corne Wildlife Management Unit.	Aug. 30 - Sept. 14 Nov. 1 - Nov. 13		one elk either sex	
	Zone 23 including Porcupine Wildlife Management Unit and Greenwater Provincial Park.	Oct. 25 - Oct. 30		one elk either sex	
Special Moose	Zones 23 to 27 and 30 - including Leaf Lake, Pasquia and Porcupine Wildlife Management Units.	Sept. 13 - Sept. 18 Nov. 1 - Nov. 13		one moose either sex	- Licence quotas (in brackets) for each area: 18(100), 23(400), 24(400), 25(300), 26(200), 27(100), 30(100), 32(200), Fort-a-la-Corne(100), Greenwater Lake Park(50).
	Zone 32 - including Bronson Recreation Site.	Nov. 1 - Nov. 13		one moose either sex	
	Zone 18 including Duck Mountain Provincial Park.	Nov. 1 - Nov. 6		one moose either sex	
	Greenwater Lake Provincial Park Only	Nov. 8 - Nov. 13		one moose either sex	
	Fort-a-la-Corne Wildlife Management Unit Only.	Sept. 20 - Oct. 2 Nov. 1 - Nov. 13		one moose either sex	

Appendix 19



Big game hunter-days recreation for Saskatchewan, 1977-1981.

Appendix 20. HUNTER TELEPHONE SURVEY
MOOSE MOUNTAIN PARK, 1982

	ELK	MOOSE
No Licences	126	175
Active Hunters	116	162
Success Rate	47%	36%
HARVEST		
Adult Males	16	22
Adult Females	17	25
Calf Male	11	6
Calf Female	8	2
Unknown Adults	1	0
Unknown Calf	1	3
Unknown Sex	1	0
Total Harvest	55	58

SEX COMPOSITION IN HARVEST

	% Bulls	% Cows	% Calves	Bulls/Cows/Calves
Elk	29	32	38	90 / 100 / 119
Moose	38	43	20	88 / 100 / 46

Appendix 21. A survey was conducted during the hunting concerning the new A.T.V. regulations in zones 23, 24 and 25. The following are the results of the survey from 284 respondents.

1. How many days did you hunt?

No. of Days	No. of People
1	28
2	34
3	53
4	38
5	46
6	47
7	16
8	5
9	2
10	3
11	1
12	6
13	2

2. Do you use an all terrain vehicle?

Yes - 110 No - 170 No Response - 6

Types of ski-doo - 44
3-wheel drive - 22
4-wheel dirve - 25
motorcycle - 7
argo - 16
others - 9 (this incluces bob cat, dune buggies and tractors)

3. Do you believe there has been previous abuse in the use of A.T.V.'s.

Yes - 204 No - 70 No Response - 6

4. Do you believe hunters should be allowed to use A.T.V.'s to drive or scare big game animals?

Yes - 10 No - The rest of the people surveyed said no.

5. Do you believe that excessive use of A.T.V.'s could have a negative impact on big game populations?

Yes - 205 No - 67 No Response - 12

6. Do you believe (a) moose populations have been negatively affected because of excessive A.T.V. use?

   Yes - 154 No - 109 No Response - 20

   (b) your quality of hunting has been negatively affected by excessive A.T.V. use?

   Yes - 122 No - 130 No Response - 34

7. What other alternatives would you like to see experimented with to control A.T.V. use?

No comment - 70
Use A.T.V. for retrieving game only - 120
No change - 19
Restrict carrying of firearms - 8
Must have hunting licence to operate A.T.V. - 1
Use to get to hunting area - 2
Designated trails - 26
Allow A.T.V.'s to set up camp - 5
Limit licences - 1
Go back to the old system - 1
No A.T.V.'s at all - 12
Restrict to certain zones or areas - 4
Use A.T.V.'s on odd or even days - 1
4 x 4 should not be classed as A.T.V. - 4
Allow use of A.T.V.'s before dawn - 7
Ski-doo's should be used only - 2
No ski-doo's should be allowed - 2

Appendix 22. DUCK MOUNTAIN BIG GAME SURVEY SUMMARY

Numbers Observed

YEAR	MOOSE	ELK	WHITE-TAILED DEER
1982	102	27	173
1978	80	11	116
1977	94	4	139
1976	104	1	131

APPENDIX 23. 1981 USHERVILLE CHECK STATION MOOSE HARVEST DATA

REGULAR MOOSE SEASON

Age	Early Season No.	%	Bull/Cow/Calf	Age	Late Season No.	%	Bull/Cow/Calf	Age	Combined Season No.	%	Bull/Cow/Calf
C	6	13	42 - 6	C	10	24	32 - 10	C	16	18	74 - 16
1½	9	19		1½	11	26		1½	20	22	
2½	8	17		2½	4	10		2½	12	13	
3½	4	8		3½	3	7		3½	7	8	
4½	4	8		4½	2	5		4½	6	7	
5½	1	2		5½	4	10		5½	5	6	
6½	3	6		6½				6½	3	3	
7½	1	2		7½				7½	1	1	
8½	1	2		8½	2	5		8½	3	3	
9½	1	2		9½				9½	1	1	
10½				10½				10½			
11½				11½				11½			
12½				12½				12½			
unknown	10	21		unknown	6	14		unknown	16	18	
	48				42				90		

Appendix 24. Carrot River Check Station - Harvest Data 1980

Special Moose Season

Age	Early Season No.	%	Bull/Cow/Calf	Age	Late Season No.	%	Bull/Cow/Calf	Age	Combined Season No.	%	Bull/Cow/Calf
C	6	21	11 11 6	C	7	32	3 12 7	C	13	26	13 23 13
1½	7	25	1.0 1.0 .54	1½	5	23	.25 1.0 .58	1½	12	24	.56 1.0 .56
2½	1	4		2½	2	9		2½	3	6	
3½	4	14		3½	1	5		3½	5	10	
4½	1	4		4½	1	5		4½	2	4	
5½	1	4		5½	-	-		5½	1	2	
6½	1	4		6½	1	5		6½	2	4	
7½	-	-		7½	2	9		7½	2	4	
8½	-	-		8½	-	-		8½	1	2	
9½	1	4		9½	-	-		9½	-	-	
10½	-	-		10½	-	-		10½	-	-	
11½	-	-		11½	-	-		11½	-	-	
12½	1	4		12½	1	5		12½	2	4	
Unknown	5	18		Unknown	2	9		Unknown	7	14	
Total	28				22				50		

Regular Moose Season

Age	Early Season No.	%	Bull/Cow/Calf	Age	Late Season No.	%	Bull/Cow/Calf	Age	Combined Season No.	%	Bull/Cow/Calf
C	16	24	51 - 16	C	18	37	31 - 18	C	34	29	82 - 34
1½	5	7		1½	5	10		1½	10	9	
2½	10	15		2½	5	10		2½	15	13	
3½	7	10		3½	4	8		3½	11	9	
4½	1	2		4½	5	10		4½	6	5	
5½	5	7		5½	2	4		5½	7	6	
6½	2	3		6½	2	4		6½	4	3	
7½	2	3		7½	2	4		7½	4	3	
8½	3	4		8½	1	2		8½	4	3	
9½	-	-		9½	-	-		9½	-	-	
10½	1	2		10½	-	-		10½	1	1	
11½	-	-		11½	-	-		11½	-	-	
12½	-	-		12½	-	-		12½	-	-	
Unknown	15	22		Unknown	5	10		Unknown	20	17	
Total	67				49				116		

Appendix 25. 1981 East Check Stations - Harvest Data

Regular Moose Season

Age	Early Season No.	%	Bull/Cow/Calf	Late Season Age	No.	%	Bull/Cow/Calf	Combined Season Age	No.	%	Bull/Cow/Calf
C	6	25	18 0 6	C	4	17	19 0 4	C	10	21	37 0 10
1½	7	29		1½	7	30		1½	14	30	
2½	-			2½	2	9		2½	2	4	
3½	3	13		3½	3	13		3½	6	13	
4½	-	-		4½	1	4		4½	1	2	
5½	-	-		5½	1	4		5½	1	2	
6½	1	4		6½	1	4		6½	2	4	
7½	-	-		7½	1	4		7½	1	2	
8½	-	-		8½	-	-		8½	-	-	
9½	-	-		9½	-	-		9½	-	-	
10½	-	-		10½	-	-		10½	-	-	
11½	-	-		11½	-	-		11½	-	-	
12½	-	-		12½	-	-		12½	-	-	
Unknown	7	29		Unknown	3	13		Unknown	9	19	
Total	24				23				47		

Special Moose Season

Age	Early Season No.	%	Bull/Cow/Calf	Late Season Age	No.	%	Bull/Cow/Calf	Combined Season Age	No.	%	Bull/Cow/Calf
C	1	20	0 4 1	C	-	-	4 2 0	C	1	9	4 6 1
1½	2	40	0 1 .25	1½	-	-	2 1 0	1½	2	18	.66 1 .16
2½	-	-		2½	2	40		2½	2	18	
3½	-	-		3½	-	-		3½	-	-	
4½	1	20		4½	-	-		4½	1	9	
5½	-	-		5½	1	10		5½	1	9	
6½	-	-		6½	-	-		6½	-	-	
7½	-	-		7½	-	-		7½	-	-	
8½	-	-		8½	-	-		8½	-	-	
9½	-	-		9½	-	-		9½	-	-	
10½	-	-		10½	-	-		10½	-	-	
11½	1	20		11½	-	-		11½	1	9	
12½	-	-		12½	-	50		12½	-	-	
Unknown	-	-		Unknown	3	-		Unknown	3	27	
Total	5				6				11		

Appendix 26. 1981 Central Check Stations - Moose Harvest Data

Regular Moose Season - Zone 29

Early Season				Late Season				Combined Season			
Age	No.	%	Bull/Cow/Calf	Age	No.	%	Bull/Cow/Calf	Age	No.	%	Bull/Cow/Calf
C	7	-	8 - 17	C	1	50	1 0 1	C	8	47	9 - 8
1½	1	-		1½	-	-		1½	1	6	
2½	1	-		2½	-	-		2½	1	6	
3½	-	-		3½	-	-		3½	-	-	
4½	2	-		4½	1	50		4½	3	18	
5½	-	-		5½	-	-		5½	-	-	
6½	2	-		6½	-	-		6½	2	12	
7½	-	-		7½	-	-		7½	-	-	
8½	1	-		8½	-	-		8½	1	6	
9½	-	-		9½	-	-		9½	-	-	
10½	-	-		10½	-	-		10½	-	-	
11½	-	-		11½	-	-		11½	-	-	
12½	-	-		12½	-	-		12½	1	6	
Unknown	1	-		Unknown	-	-		Unknown	-	-	
Total	15				2				17		

Appendix 27. 1981 West Check Stations - Moose Harvest Data

Special Moose Season

Age	No.	%	Early Season Bull/Cow/Calf	Age	No.	%	Late Season Bull/Cow/Calf	Age	No.	%	Combined Season Bull/Cow/Calf
C	3	27	4 4 3	C	4	14	12 13 4	C	7	18	16 17 7
1½	4	36	1.0 1.0 .75	1½	5	17	.92 1.0 .30	1½	9	23	.94 1.0 .41
2½	1	9		2½	3	10		2½	4	10	
3½	1	9		3½	2	7		3½	3	8	
4½	-	-		4½	1	3		4½	1	2	
5½	-	-		5½	3	10		5½	3	8	
6½	-	-		6½	2	7		6½	2	5	
7½	1	9		7½	3	10		7½	4	10	
8½	-	-		8½	-	-		8½	-	-	
9½	-	-		9½	-	-		9½	-	-	
10½	-	-		10½	1	3		10½	1	2	
11½	-	-		11½	-	-		11½	-	-	
12½	-	-		12½	-	-		12½	-	-	
Unknown	1	9		Unknown	6	21		Unknown	6	15	
Total	11				29				40		

Regular Moose Season

Age	No.	%	Early Season Bull/Cow/Calf	Age	No.	%	Late Season Bull/Cow/Calf	Age	No.	%	Combined Season Bull/Cow/Calf
C	10	40	16 - 9	C	14	30	32 - 15	C	24	33	48 - 24
1½	-	-		1½	4	9		1½	4	6	
2½	-	-		2½	1	2		2½	1	1	
3½	6	24		3½	6	13		3½	12	17	
4½	3	12		4½	6	13		4½	9	13	
5½	-	-		5½	1	2		5½	1	1	
6½	1	4		6½	5	11		6½	6	8	
7½	-	-		7½	1	2		7½	1	1	
8½	-	-		8½	-	-		8½	-	-	
9½	1	4		9½	1	2		9½	2	3	
10½	-	-		10½	1	2		10½	1	1	
11½	1	4		11½	-	-		11½	1	1	
12½	-	-		12½	7	-		12½	-	-	
Unknown	3	12		Unknown	7	15		Unknown	10	14	
Total	25				47				72		

Appendix 28. Thickwood Hill-Zone 22-Moose Season-Harvest Data 1980.

Late Season

Age	No.	%	Bull/Cow/Calf		
C	2	20	6	2	2
1½	-	-	3.0	1.0	1.0
2½	-	-			
3½	2	20			
4½	-	-			
5½	2	20			
6½	1	10			
7½	-	-			
8½	-	-			
9½	-	-			
10½	-	-			
11½	-	-			
12½	-	-			
Unknown	3	30			
Total	10				

A message from the director of wildlife

Fellow Sportsman:

You are one of a group of Saskatchewan big game hunters selected to receive the 1981 Big Game Hunter Survey. Please complete this questionnaire and return it in the enclosed, postage-paid envelope when you have finished hunting big game this year. If you don't buy a licence this fall, or if you buy a licence but don't get out to hunt, please indicate this and return the questionnaire anyway. All information is essential for a good survey.

I would like to assure you that this survey is important. It forms the backbone of big game management in Saskatchewan. The hunting information on harvest and hunter recreation days along with other data is used to determine season dates and bag limits.

You may wonder "O.K., but why do I seem to get one of these things every year?"

First of all, we have to do the Big Game Hunter Survey annually because hunting success and game populations can change a lot from year to year. Not only can extreme weather have an impact on big game success and winter survival — it and other factors can strongly influence hunter activity and the big game harvest. Responsible game management requires the monitoring of each hunting season.

Secondly, it is essential for statistical accuracy to randomly select each year the recipients of the survey. This is done by computer, based partially on last year's licence sales and on this year's Big Game Draw. Because many hunters fail to return this form, about one-third of all big game hunters must be sent a questionnaire. Therefore, it is possible, but not very probable to be surveyed two or more years in a row. If the return rate improves, we will be able to get the information we need by contacting fewer hunters. This would reduce department costs and your inconvenience.

We have improved the design of the Big Game Hunter Survey this year, and mailed it later, to make it easier for you to complete.

We realize that you may be interested in the information collected last year. A summary is provided on the last page of this form.

Your help in filling out the Big Game Survey is appreciated. Good big game management and hunting are goals that we can achieve together.

Yours sincerely,

Ross MacLennan

Ross MacLennan,
Director,
Wildlife Branch

1981 Big Game Hunter Survey

1. **If you did not purchase a 1981 Saskatchewan Big Game Licence Please Check ☑ Here ☐ and return immediately, Thank You.**

2. If you **did** purchase a 1981 Saskatchewan Big Game Licence please fill out the following questionnaire, and return it upon the completion of your hunting.

3. Check ☑ each Saskatchewan Big Game Licence you purchased and each Big Game species you hunted in Saskatchewan in 1981

	Antelope	Moose	Mule Deer	Elk	1st Bear	2nd Bear	1st White-Tailed Deer	2nd White-Tailed Deer	Woodland Caribou
Licence Purchased	☐	☐	☐	☐	☐	☐	☐	☐	☐
Species Hunted	☐	☐	☐	☐	☐	☐	☐	☐	☐

4. Check ☑ if licence obtained through the draw Moose ☐ Elk ☐

5. Archery Hunters please indicate your archery hunting effort with an (*) instead of a ☑ in time spent column.

6. **Please record all your hunting activities, whether or not your bagged an animal.**
   - Use a separate line for each day hunted; if you hunted in more than one zone in a day, use a separate line for each zone.
   - Use the following guide for recording hunting time
     (4 or more hours = 1 day less than 4 hours = ½ day)

Species	Date(s) Month	Date(s) Day	GM Zone No.	Time Hunted (Check ✓) 1 Day	Time Hunted (Check ✓) ½ Day	Kill Information
(A) White-Tailed Deer 1st Licence						Zone Number _____ Date of Kill _____ Month _____ Day Animal was (check ✓ below) 1 Buck 2 Doe 3 Fawn
(B) White-Tailed Deer 2nd Licence						Zone Number _____ Date of Kill _____ Month _____ Day Animal was (check ✓ below) 1 Buck 3 Fawn 2 Doe
(C) Moose						Zone Number _____ Date of Kill _____ Month _____ Day Animal was (check ✓ below) 1 Bull 2 Cow 3 Calf
(D) Antelope						Zone Number _____ Date of Kill _____ Month _____ Day Animal was (check ✓ below) 1 Buck 3 Kid 2 Doe
(E) Mule Deer						Zone Number _____ Date of Kill _____ Month _____ Day Animal was (check ✓ below) 1 Buck 3 Fawn 2 Doe
(F) Elk						Zone Number _____ Date of Kill _____ Month _____ Day Animal was (check ✓ below) And/or was 1 Bull 1 Shorter than 18" 2 Cow 2 18" or over 3 Calf
(G) Bear 1st Licence						Zone Number _____ Date of Kill _____ Month _____ Day Animal was (check ✓ below) 1 Bear 3 Cubs 2 Sow
(H) Bear 2nd Licence						Zone Number _____ Date of Kill _____ Month _____ Day Animal was (check ✓ below) 1 Bear 3 Cubs 2 Sow
(I) Woodland Caribou						Zone Number _____ Date of Kill _____ Month _____ Day Animal was (check ✓ below) 1 Bull 2 Cow 3 Calf

Saskatchewan

Saskatchewan
Tourism and
Renewable
Resources

3211 Albert St.
Regina, Canada
S4S 5W6

Refer to File_____

January 4, 1982

Dear Sportsman:

Approximately two months ago a questionnaire was mailed to you asking that you report your big game hunting activities in Saskatchewan during the 1981 season. To date, we have not received your reply.

If you have already completed and mailed the original questionnaire, please disregard this notice.

If, however, you have not returned your hunting information, please complete and return the enclosed questionnaire as soon as possible in the self-addressed, postage-paid envelope.

By filling out the Big Game Hunter Survey, you will be providing the Wildlife Branch with essential information on the hunting season which can not be obtained without your assistance.

We trust that you will take this opportunity to make an important contribution to wildlife management in Saskatchewan.

Yours sincerely,

Ross MacLennan

Ross MacLennan
Director
Wildlife Branch

Encl.

Appendix 30. 1981 Big Game Hunter Survey Reminder Letter